508.2

UNITED STATES

EXPLORING EXPEDITION.

DURING THE YEARS

1838, 1839, 1840, 1841, 1842.

UNDER THE COMMAND OF

✓

CHARLES WILKES, U. S. N.

---

[10]

ATLAS.

LIBRARY OF CONGRESS
184167
SEP 19 1888
C
SMITHSONIAN DEPOSIT

GEOLOGY.

BY

JAMES D. DANA, A. M.,

GEOLOGIST OF THE EXPEDITION.

MEMBER OF THE SOC. CÆS. NAT. CUR. OF MOSCOW, THE SOC. PHILOMATHIQUE OF PARIS,
THE AMERICAN ACADEMY OF ARTS AND SCIENCES AT BOSTON, ETC.

NEW YORK:
GEO. P. PUTNAM, 155 BROADWAY.
LONDON: PUTNAM'S AMERICAN AGENCY,
49 BOW LANE, CHEAPSIDE.

1849

Q
115
W6X
1844
Atlas
v.10
SciHRB

508.2
U58
v.10
atlas

EXPLANATION OF PLATES.

PLATE 1.

Fig. 1. Urosthenes Australis, natural size; 1 *a*, part of two rays of the dorsal fin, enlarged.—p. 681.

Fig. 2. Terebratula amygdala; *a*, *b*, *c*, *d*, different views, natural size; *e*, lower margin from another specimen; *f*, internal structure, magnified 40 diameters.—p. 682.

Fig. 3. Terebratula elongata; *a*, *b*, different views, natural size; *c*, *d*, internal structure, magnified 40 diameters.—p. 682.

Fig. 4. Terebratula ——?—p. 683.

Fig. 5. Terebratula?—p. 683.

Fig. 6. Spirifer glaber, *a*, *b*, specimen from Black Head, Illawarra, natural size; *c*, *d*, from Harper's Hill; *e*, *f*, distorted, from Harper's Hill; *g*, surface of *c*, magnified 3 diameters.—p. 683.

Fig. 7. Spirifer Darwinii; *a*, cast, with internal spiral support in view; *b*, broken valve.—p. 684.

PLATE 2.

Fig. 1. Spirifer duodecicostatus; *a*, *b*, natural size.—p. 684.

Fig. 2. Spirifer ——? natural size.—p. 684.

Fig. 3. Spirifer vespertilio; *a*, *b*, *c*, natural size.—p. 685.

Fig. 4. Spirifer phalæna, a fragment, natural size.—p. 685.

Fig. 5. Siphonotreta? curta; *a*, *b*, natural size.—p. 685.

Fig. 6. Lingula ovata; *a*, *b*, natural size.—p. 685.

Fig. 7. Productus fragilis; *a*, *b*, *c*, natural size; *d*, profile of section.—p. 686.

Fig. 8. Productus brachythærus, natural size.—p. 686.

Fig. 9. Solecurtus? ellipticus, natural size.—p. 686.

Fig. 10. Solecurtus (Psammobia?) planulatus.—p. 686.

Fig. 11. Pholadomya (Platymya) undata; *a*, *b*, natural size.—p. 687.

Fig. 12. Pholadomya (Homomya) glendonensis, natural size.—p. 687.

PLATE 3.

Fig. 1. Pholadomya (Homomya) audax; *a*, *b*, *c*, natural size.—p. 687.

Fig. 2. Pholadomya (Homomya) curvata; *a*, *b*, natural size.—p. 688.

Fig. 3. Astartila? corpulenta; *a*, *b*, *c*, natural size.—p. 691.

Fig. 4. Astarte gemma, internal cast, natural size; *a*, cast of exterior; *b*, enlarged, showing cast of hinge.—p. 688.

Fig. 5. Astartila intrepida, natural size; *a*, dorsal view; *b*, larger anterior muscular impression, enlarged; *c*, smaller anterior muscular impression.—p. 689.

Fig. 6. Astartila cyprina, internal cast, natural size; *a*, dorsal view; *b*, large anterior muscular impression (from cast), with commencement of palleal impression; *c*, *d*, small anterior from different specimens.—Figs. 7 *a*, 7 *b*, same species?—p. 689.

PLATE 4.

Fig. 1. Astartila cytherea, natural size, exterior cast, showing surface of shell; *a*, dorsal view of same, showing ligament of hinge; *b*, *c*, *d*, views of an internal cast; *e*, larger anterior muscular impression from cast, enlarged; *f*, smaller ditto; *g*, posterior ditto.—p. 689.

Fig. 2. Astartila polita, natural size; *a*, lateral view of internal cast; *b*, cast with portion of shell remaining; *c*, dorsal view of cast.—p. 690.

Fig. 3. Astartila cyclas, exterior cast, showing hinge ligament; *a*, dorsal view of same; *b*, *c*, interior cast; *d*, anterior muscular impression, enlarged; *e*, posterior ditto.—p. 690.

Fig. 4. Astartila transversa, internal cast, natural size; *a*, front view of same; *b*, dorsal; *c*, *d*, anterior muscular impressions from cast, enlarged.—p. 690.

Fig. 5. Cardinia recta, natural size, showing exterior in part; *a*, imperfect, showing internal cast; *b*, profile of vertical section of cast.—p. 691.

Fig. 6. Cardinia cuneata, internal cast, natural size; 6 *a*, another specimen; *b*, *e*, other views of 6 *a*; *c*, *d*, other views of 6.—p. 692.

Fig. 8. Cardinia costata, natural size; *a*, partly internal cast; *b*, dorsal view of same; *c*, profile of vertical section.—p. 692.

PLATE 5.

Fig. 1. Pachydomus cuneatus, natural size; *a*, *b*, different views of cast.—p. 693.

Fig. 2. Pachydomus antiquatus, natural size; cast with portion of shell.—p. 693.

Fig. 3. Mæonia elongata, natural size; *a*, *b*, *c*, different views.—p. 695.

Fig. 4. Mæonia valida, cast, natural size; *a*, *b*, anterior muscular impressions, different sides.—p. 695.

Fig. 5. Mæonia axinia; *a*, *b*, interior cast, natural size; *c*, smaller anterior muscular impressions from cast, much enlarged; two anterior muscular impressions, natural size; *d*, probably same species, exterior cast.—p. 696.

PLATE 6.

Fig. 1. *a*, *b*, Mæonia carinata, different views of one valve, natural size.—p. 696.

Fig. 2. Mæonia fragilis, broken specimen, natural size. Fig. 3, same, smaller specimen.—p. 696.

Fig. 4. *a*, Mæonia myiformis, interior cast, natural size; *b*, front view; *c*, hinge surface.—p. 697.

Fig. 5. *a*, Mæonia elliptica, natural size; *b*, *c*, other views.—p. 697.

Fig. 6. 6 *a*, Mæonia elliptica, interior cast of a large specimen.

Fig. 7. Mæonia grandis, natural size; 7 *a*, outline of one valve, front view.—p. 697.

Fig. 8. Mæonia grandis, smaller specimen; 8 *a*, end view, valves dislocated.

PLATE 7.

Fig. 1. Mæonia gracilis, natural size; *a*, lateral view; *b*, dorsal view; *c*, end view.—p. 698.

Fig. 2. Mæonia ? recta, lateral view, natural size, shell broken in front.—p. 698.

Fig. 3. Nucula abrupta, side view of cast; *a*, cast of posterior muscular impression.—p. 698.

Fig. 4. Nucula concinna, imperfect, natural size.—p. 699.

Fig. 5. Nucula glendonensis, natural size.—p. 699.

Fig. 6. Eurydesma elliptica, *a*, *b*, *c*, *d*, different views, natural size.—p. 700.

Fig. 7. Eurydesma globosa, side view, natural size; 7 *a*, end view.—p. 700.

Fig. 8. Eurydesma sacculus, natural size; *a*, cast, imperfect; *b*, end view of same; *c*, dorsal part of valve, showing back view of beak portion; *d*, profile of vertical section of valve; *e*, under view of hinge portion of shell.—p. 700.

PLATE 8.

Fig. 1. Eurydesma cordata, natural size; *a*, dorsal view.—p. 700.

Fig. 2. Cardium australe, natural size.—p. 701.

Fig. 3. Cardium ? ferox, part of shell, and external cast of a portion of same, natural size; *a*, *b*, internal cast of corresponding portion.—p. 701.

Fig. 4. Cypricardia acutifrons; *a*, *b*, natural size.—p. 702.

Fig. 5. Cypricardia imbricata, enlarged one-sixth.—p. 702.

Figs. 6, 7. Cypricardia imbricata ? natural size.—p. 702.

Fig. 8. Cypricardia arcodes; *a*, *b*, natural size.—p. 702.

Fig. 9. Cypricardia ——, internal cast, imperfect, natural size.—p. 703.

Fig. 10. Cypricardia prærupta, natural size.—p. 703.

PLATE 9.

Fig. 1. Cypricardia siliqua; *a*, *b*, natural size.—p. 703.

Fig. 2. Cypricardia simplex, natural size.—p. 703.

Fig. 3. Cypricardia (Avicula ?) veneris; *a*, *b*, natural size.—p. 704.

Fig. 4. Avicula volgensis, imperfect, natural size.—p. 704.

Fig. 5. Pecten comptus, natural size.—p. 704.

Fig. 6. Pecten leniusculus; *a*, *b*, natural size.—p. 704.

Fig. 7. Pecten tenuicollis; *a*, section of surface.—p. 705.

Fig. 8. Pecten mitis; *a*, *b*, natural size.—p. 705.

Fig. 9. Pecten illawarrensis, natural size; *a*, section of surface.—p. 705.

Figs. 10, 11, 12. ——. —p. 705.

Fig. 13. Pileopsis tenella; *a*, *b*, natural size.—p. 706.

Fig. 14. Pileopsis alta; *a*, *b*, natural size.—p. 706.

Fig. 15. Pleurotomaria morrisiana, natural size, from Harper's Hill; 15 *a*, enlarged view of surface. 16. Illawarra specimen.—p. 706.

Fig. 17. Pleurotomaria nuda; *a*, *b*, *c*, natural size.—p. 706.

PLATE 10.

Fig. 1. Platyschisma oculus, broken and compressed specimen, natural size.—p. 707.

Fig. 2. Platyschisma depressum; *a*, *b*, casts, natural size.—p. 707.

Fig. 3. Natica ——? natural size.—p. 707.

Fig. 4. Bellerophon undulatus; *a*, *b*, natural size.—p. 707.

Fig. 5. Bellerophon strictus; *a*, *b*, natural size.—p. 707.

Fig. 6. Bellerophon micromphalus; *a*, *b*, natural size.—p. 708.

Fig. 7. Theca lanceolata, *a*, *b*, natural size; *c*, transverse section; *d*, restored specimen.—p. 708.

Fig. 8. Conularia inornata, natural size.—p. 709.

Fig. 9. Conularia levigata, specimen flattened out, natural size; *a*, enlarged view of articulation.—p. 710.

Fig. 10. Pentadia (tribrachyocrinus ? *of M'Coy*,) corona, external cast, ornate side; *a*, opposite or naked side; *b*, enlarged view of ridges; *c*, transverse section, showing thickness of the original fossil; fig. 11, another plate; fig. 12, another plate, probably of a different species.—pp. 712, 713.

Fig. 13. Fenestella internata, part of frond, natural size; *a*, cast of frond, much enlarged; *b*, under surface of branchlet much enlarged, exterior removed.—p. 710.

Fig. 14. Fenestella media, natural size; *a*, under surface enlarged.—p. 710.

Fig. 15. Fenestella internata ? a cast, natural size.—p. 710.

PLATE 11.

Fig. 1. Fenestella ampla, part of a frond, natural size; 1 *a*, inner inferior surface, enlarged.—p. 710.

DSI

Fig. 2. FENESTELLA AMPLA? cast, natural size; 2 *a*, same, enlarged.—p. 710.

Fig. 3. FENESTELLA FOSSULA, part of a frond, natural size; 3 *a*, cast of upper surface, enlarged; *b*, inner inferior surface, enlarged.—p. 710.

Fig. 4. FENESTELLA GRACILIS, part of a frond, natural size.—p. 711.

Fig. 5. 5 *a*, FENESTELLA ——? natural size.

Fig. 6. CHETETES CRINITA, form of corallum, size much diminished; 6 *a*, size and closeness of columns; 6 *b*, outer surface of corallum, natural size; 6 *c*, same, enlarged.—p. 711.

Fig. 7. CHETETES TASMANIENSIS, part of corallum, natural size; 7 *a*, surface, magnified.—p. 711.

Fig. 8. CHETETES TASMANIENSIS, flattened, natural size; 8 *a*, surface, enlarged.

Fig. 9. CHETETES OVATA, part of a corallum, natural size; 9 *a*, *b*, columns, enlarged.—p. 712.

Fig. 10. CHETETES GRACILIS; 10 *a*, columns, enlarged; 10 *b*, *c*, surface, enlarged.—p. 712.

Fig. 11. ——? natural size.—p. 712.

Figs. 12–15. Encrinital remains.—p. 712.

PLATE 12.

Figs. 1, 2, 3, 4, 5, 6, 7, 8. Fruit scales.—p. 714.

Fig. 9. NOEGGERATHIA SPATULATA, natural size.—p. 715.

Fig. 10. NOEGGERATHIA MEDIA, natural size.—p. 715.

Fig. 11. CALAMITES ——? fragments, natural size.—p. 715.

Fig. 12. SPHENOPTERIS LOBIFOLIA, natural size.—p. 715.

Fig. 13. GLOSSOPTERIS BROWNIANA, natural size; *a*, part of a frond magnified 2 diameters; *b*, cast of under (?) surface of a small part, magnified 6 diameters; *c*, a clump of fronds, as they grew together.—p. 716.

Fig. 14. Young of Glossopteris Browniana?—p. 717.

PLATE 13.

Fig. 1 *a*. GLOSSOPTERIS AMPLA, basal part of a frond; *b*, terminal part; natural size.—p. 717.

Fig. 2. GLOSSOPTERIS RETICULUM, part of a frond, natural size.—p. 717.

Fig. 3. GLOSSOPTERIS ——? natural size.—p. 718.

Fig. 4. GLOSSOPTERIS ELONGATA, natural size.—p. 718.

Fig. 5. GLOSSOPTERIS? CORDATA, natural size.—p. 718.

Fig. 6. PHYLLOTHECA AUSTRALIS, natural size.—p. 718.

PLATE 14.

Fig. 1. PHYLLOTHECA AUSTRALIS, whorl of leaflets, natural size.—p. 718.

Fig. 2. PHYLLOTHECA ——? natural size.—p. 719.

Figs. 3, 4. CLASTERIA AUSTRALIS, natural size; 5, enlarged.—p. 719.

Fig. 6 *a*. ANARTHROCANNA, natural size.—p. 720.

Fig. 6 *b*. CYSTOSEIRITES?—p. 720.

Figs. 7, 8. AUSTRELLA RIGIDA, natural size.—p. 720.

Fig. 9. CONFERVITES? TENELLA, natural size.—p. 720.

PLATE 15.

Fig. 1. HELICERUS FUEGIENSIS, natural size; *a*, section of part; *b*, section, showing spiral portion; *c*, profile of vertical section.—p. 720.

Fig. 2. TRIGONIA LORENTII, natural size; 2 *a*, profile of vertical section; *b*, *c*, teeth of hinge of valves, imperfect.—p. 721.

Fig. 3 *a*, *b*. TURBO ——, natural size.—p. 721.

Fig. 4. NAUTILUS TENUIPLANATUS, natural size.—p. 721.

Fig. 5. AMMONITES PICKERINGI, natural size.—p. 721.

Fig. 6. AMMONITES ——? *a*, section of outer turn of spire.

Fig. 7. OSTRÆA ——, natural size.—p. 722.

PLATE 16.

Fig. 1. Vertebra of a Cetacean, natural size.—p. 722.

Fig. 2. Remains of a fish, allied to Trigla, natural size; *a*, *b*, scales, enlarged.—p. 722.

Fig. 3. Remains of a fish, natural size.—p. 722.

Fig. 4. Calcareous spines, in a concretion of limestone.

PLATE 17.

Fig. 1. 2 *a*, 2 *b*, Vertebræ of fish, natural size.—p. 722.

Fig. 3. CALLIANASSA OREGONENSIS, leg, natural size.—p. 722.

Fig. 4. BALANUS ——, impression of base, natural size.—p. 723.

Fig. 5. MYA ABRUPTA, side view, natural size; 5 *a*, upper view.—p. 723.

Fig. 6. THRACIA TRAPEZOIDES, natural size.—p. 723.

Fig. 7. SOLEMYA VENTRICOSA, natural size; 8, same, of a smaller specimen.—p. 723.

Fig. 9. DONAX PROTEXTA, cast, natural size.—p. 723.

Figs. 10, 10 *a*. VENUS BISECTA, natural size.—p. 724.

Fig. 11. VENUS ANGUSTIFRONS, natural size.—p. 724.

Fig. 12. VENUS LAMELLIFERA, side view, lamellæ of surface mutilated; 12 *a*, end view of broken specimen, showing the lamellæ penetrating the enclosing rock.—p. 724.

Fig. 13. VENUS BREVI-LINEATA, cast, natural size.—p. 724.

PLATE 18.

Fig. 1. VENUS ——? lateral view, natural size; 1 *a*, dorsal view.—p. 724.

Fig. 2. LUCINA ACUTILINEATA, lateral view, enlarged one-sixth; 2 *a*, 2 *b*, other views.—p. 725.

Fig. 3. TELLINA ARCTATA, natural size; 3 *a*, dorsal view.—p. 725.

Fig. 4. TELLINA EMACERATA, natural size.—p. 725.

Fig. 5. TELLINA ALBARIA, natural size.—p. 725.

Fig. 6. NUCULA DIVARICATA, natural size, in oblique position; 6 *a*, lateral profile.—p. 725.

Fig. 7. NUCULA IMPRESSA, natural size; *a*, *b*, cast of portions of exterior shell; *c*, *d*, internal casts; *e*, view of hinge.—p. 726.

Fig. 8. PECTUNCULUS PATULUS, cast, natural size; 8 *a*, end view.—p. 726.

Fig. 9. PECTUNCULUS NITENS, natural size; *a*, *b*, different views.—p. 726.

Fig. 10. ARCA DEVINCTA, several specimens in rock, natural size; *a*, portion of exterior shell unworn.—p. 726.

Fig. 11. PECTUNCULUS ——? *a*, *b*, cast, different views.—p. 726.

Fig. 12. Cardita subtenta, natural size; *a*, end view, specimen in right side partly covered with rock.—p. 726.

Fig. 13. Pecten propatulus, natural size; *a*, profile of costæ.—p. 726.

PLATE 19.

Fig. 1. Terebratula nitens, natural size; 1 *a*, end view.—p. 726.

Fig. 2. ——?—p. 727.

Figs. 3, 4, 5. Dolium petrosum, shells of different ages.—p. 727.

Fig. 6. Sigaretus scopulosus, natural size; *a*, another view; *b*, *c*, a smaller specimen.—p. 727.

Fig. 7. Natica saxea; *a*, *b*, natural size.—p. 727.

Fig. 8. Bulla petrosa, natural size.—p. 727.

Fig. 9. Crepidula prærupta; *a*, under view; 10 *a*, *b*, views of cast.—p. 727.

Fig. 11. Crepidula ——? *a*, *b*, views of cast.—p. 727.

Fig. 12. Rostellaria indurata, cast, natural size.—p. 727.

PLATE 20.

Fig. 1. Cerithium mediale, natural size; *a*, internal cast.—p. 728.

Fig. 2. Buccinum devinctum, cast, natural size; *a*, another view.—p. 728.

Fig. 3. Fusus geniculus, natural size.—p. 728.

Fig. 4. Fusus corpulentus, internal cast, natural size.—p. 728.

Fig. 5. Nautilus angustatus, imperfect; fig. 6, young of same.—p. 728.

Fig. 7. Teredo substriata, *a*, another specimen; *b*, internal cast.—p. 728.

Figs. 8 to 14. Undetermined species.—p. 728.

PLATE 21.

Fig. 1. Imperfect cast.

Figs. 2, 3, 4. Foraminifera.—p. 729.

Figs. 5, 6. Galerites oregonensis.—p. 729.

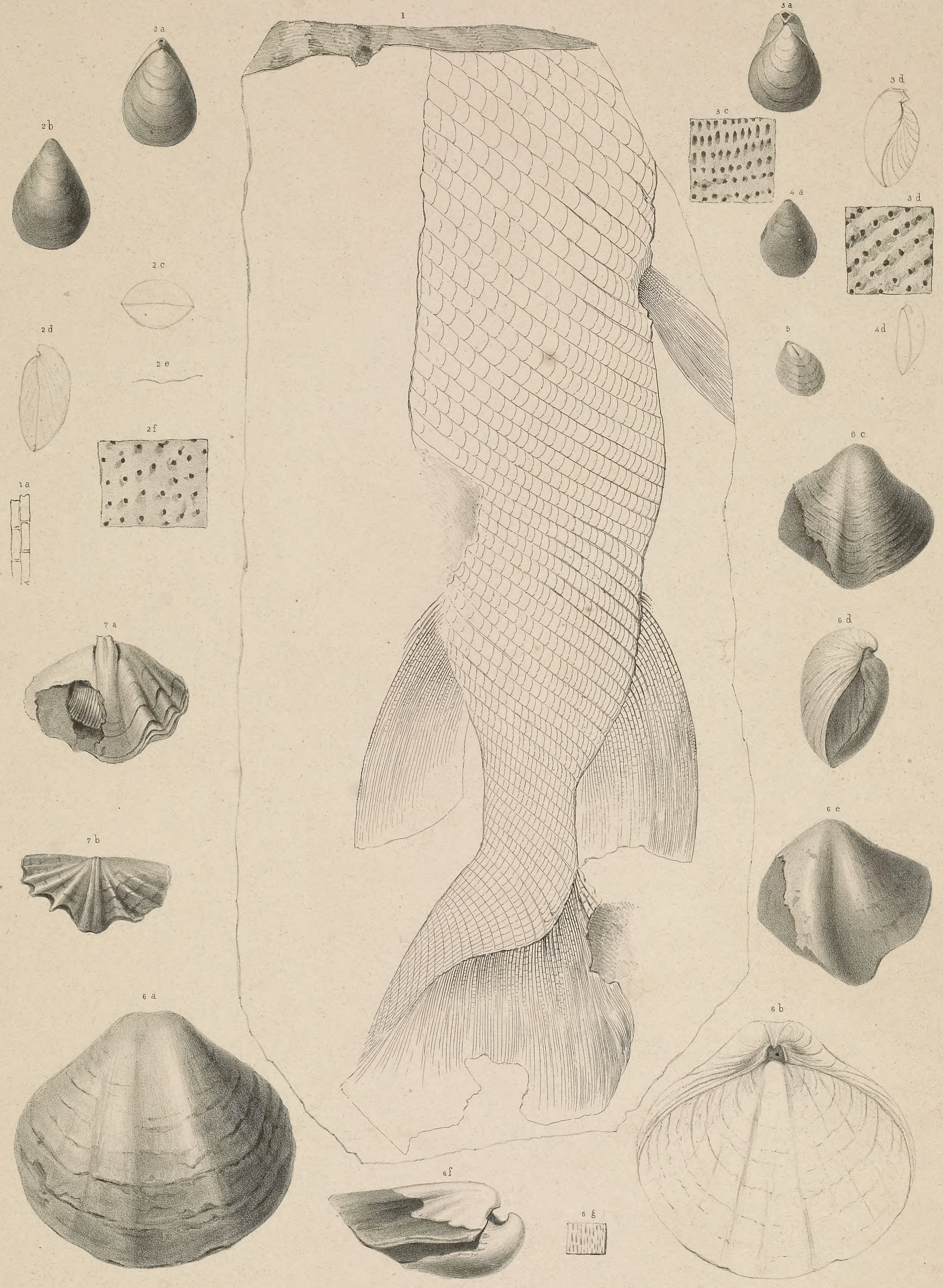
Fig. 7. Undetermined.—p. 729.

Fig. 8. Undetermined.—p. 729.

Fig. 9. Abies robusta, natural size.—p. 729.

Fig. 10. Species of Juniperus, Taxodium, Smilax? etc., natural size.—p. 729.

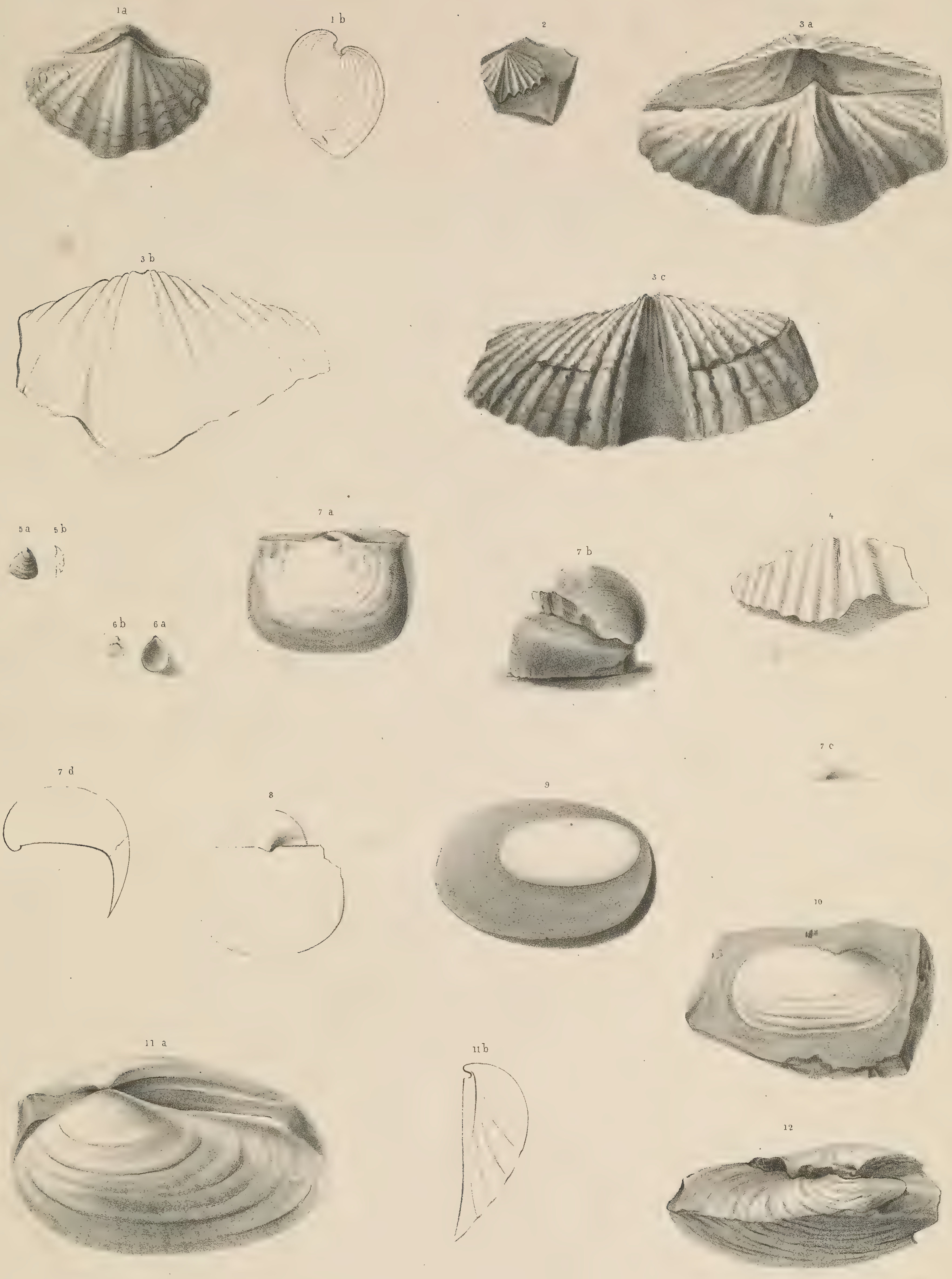
Fig. 11. Coralline Alga, natural size.—p. 730.



Drawn by J. D. Dana.

Lith. of Sarony & Major, 117 Fulton St. N.Y.

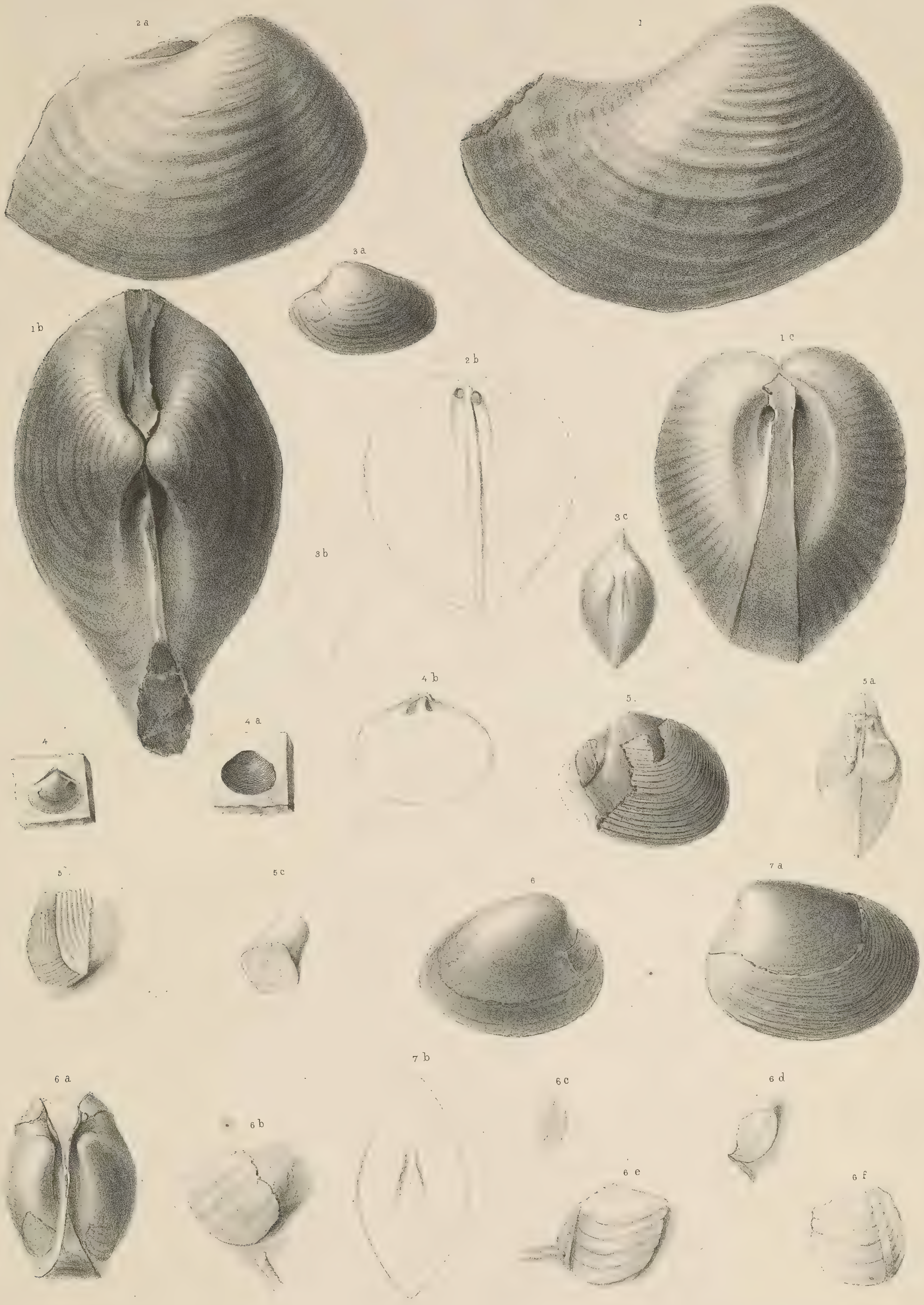
Fig 1. 1a, Urosthenes australis. — 2 a, b, c, d, e, f, Terebratula amygdala. — 3 a, b, c, d, T. elongata. — 4 Terebratula, — ? 5, ? — 6 a, b, c, d, e, f, g, Spirifer glaber. — 7 a, b, S. Darwinii.



Drawn by J. D Dana.

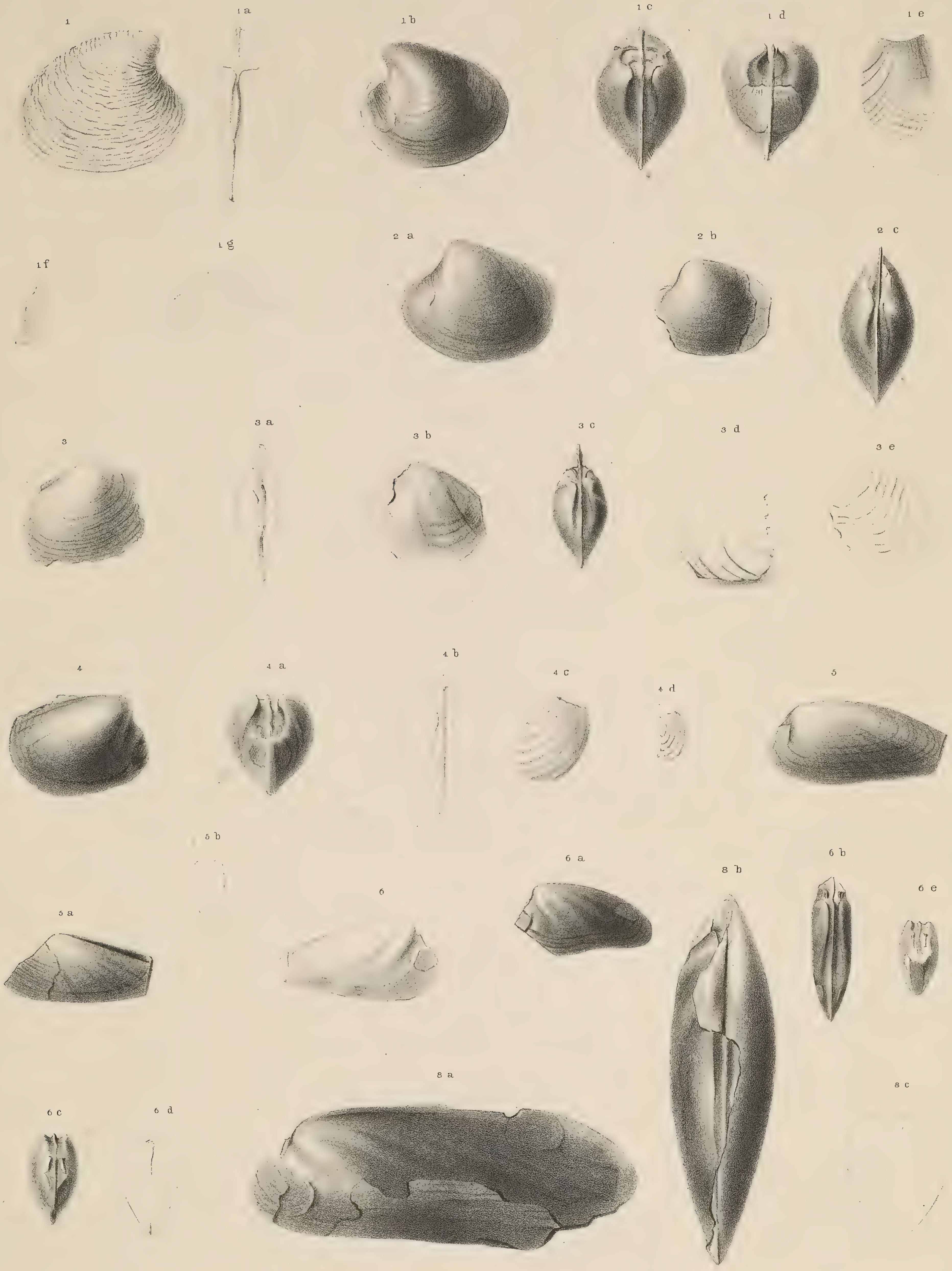
Lith of Sarony & Major, 117 Fulton St N.Y.

Fig. 1a, b, Spirifer duodecicostatus — 2 S. — ? — 3, a, b, c, S. vespertilio. — 4, S. phalæna. — 5 a, b, Siphonotreta ? — 6 a, b, Lingula ovata. — 7 a, b, c, d, Productus fragilis. — 8, P. brachythærus. — 9, Solecurtus ellipticus. 10, S. planulatus. — 11 a, b, Pholadomya undata. 12, P. glendonensis.



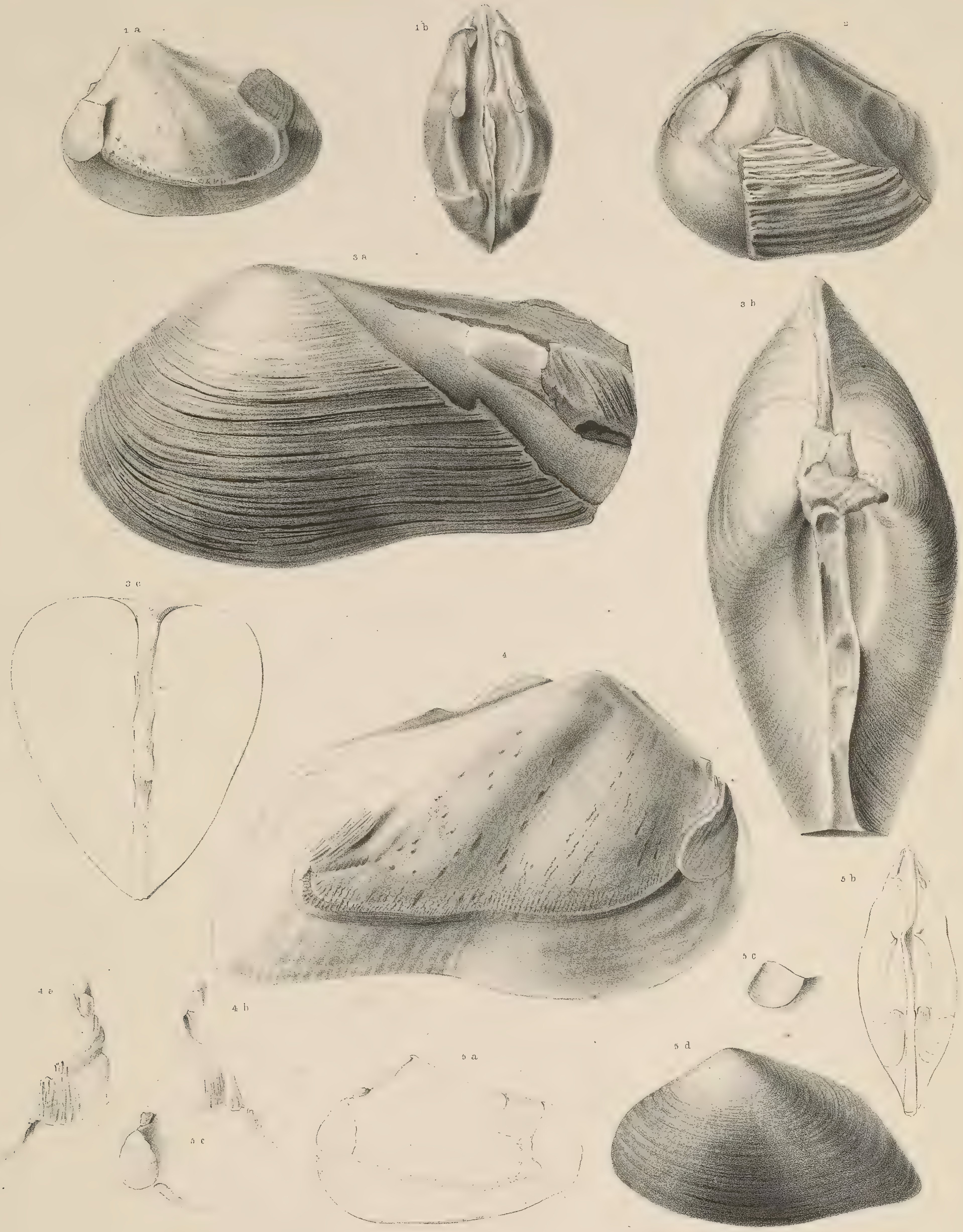
Drawn by J. D. Dana. *Lith. of Sarony & Major, 117 Fulton St. N Y*

Fig. 1 a, b, c, Pholadomya (Homomya) audax. — 2, a, b, P. curvata. — 3 a, b, c, Astartila? corpulenta. — 4, 4 a, b, Astarte gemma. — 5, 5 a, b, c, Astartila intrepida. — 6. 6 a, b, c, d, e, f, A. cyprina. — 7, a, b, A. cyprina?



Drawn by J.D. Dana. *Lith. of Sarony & Major 117 Fulton St. N.Y.*

Fig. 1, 1a, b, c, d, e, f, g, Astartila cytherea. — 2 a, b, c, A. polita, — 3, 3a, b, c, d, e, A. cyclas. — 4, 4a, b, c, d, A. transversa. — 5, 5a, b, Cardinia recta. — 6 a, b, c, d, e, C. cuneata. — 8 a, b, c, C. costata.

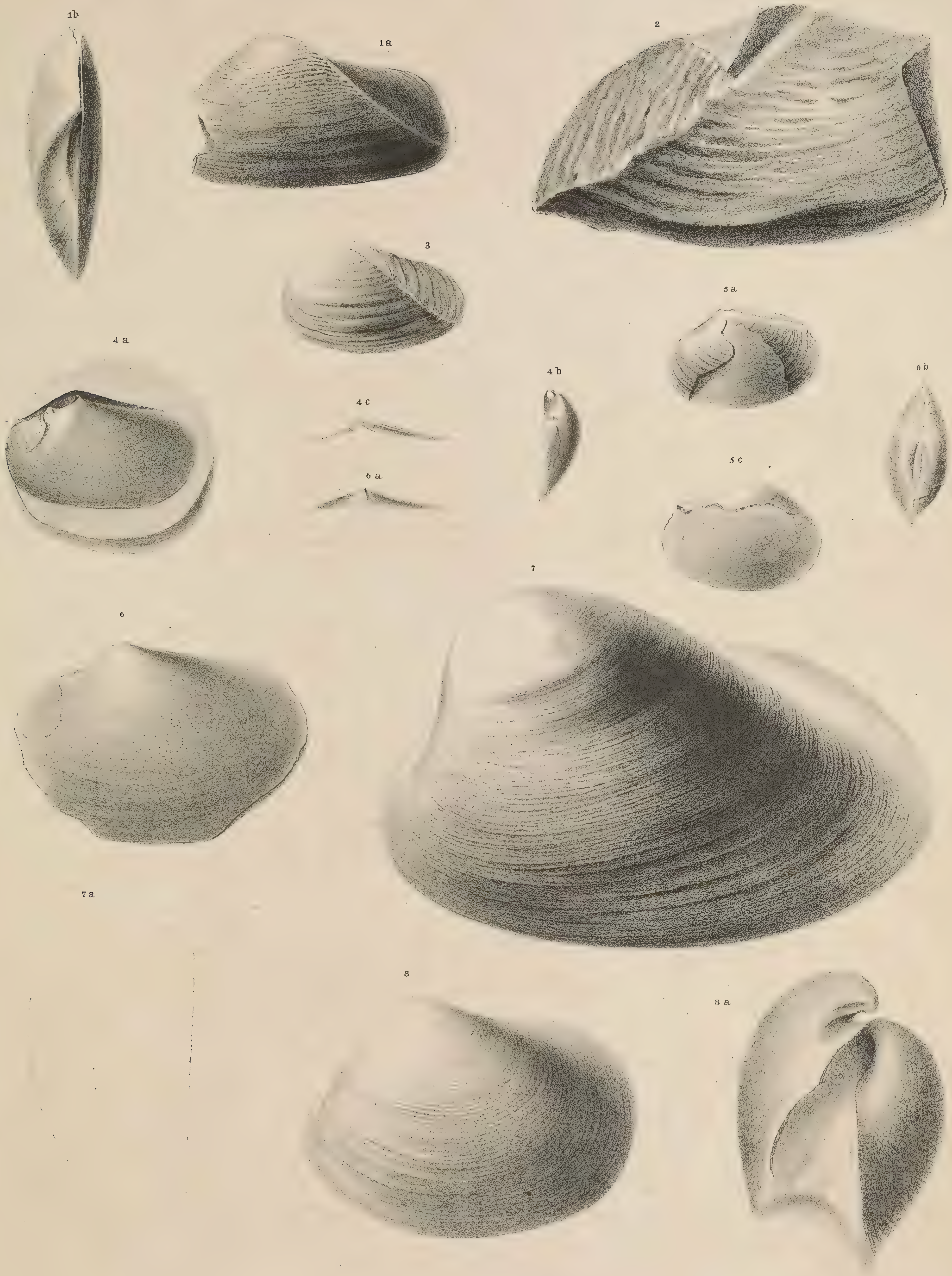


Drawn by J.D. Dana.

Lith. of Sarony & Major 117 Fulton St. N.Y.

Fig. 1 a, b, Pachydomus cuneatus. —— 2, P. antiquatus. —— 3 a, b, c, Mæonia elongata. —— 4, 4 a, b, M. valida. —— 5, 5 a, b, c, c', d, M. axinia.

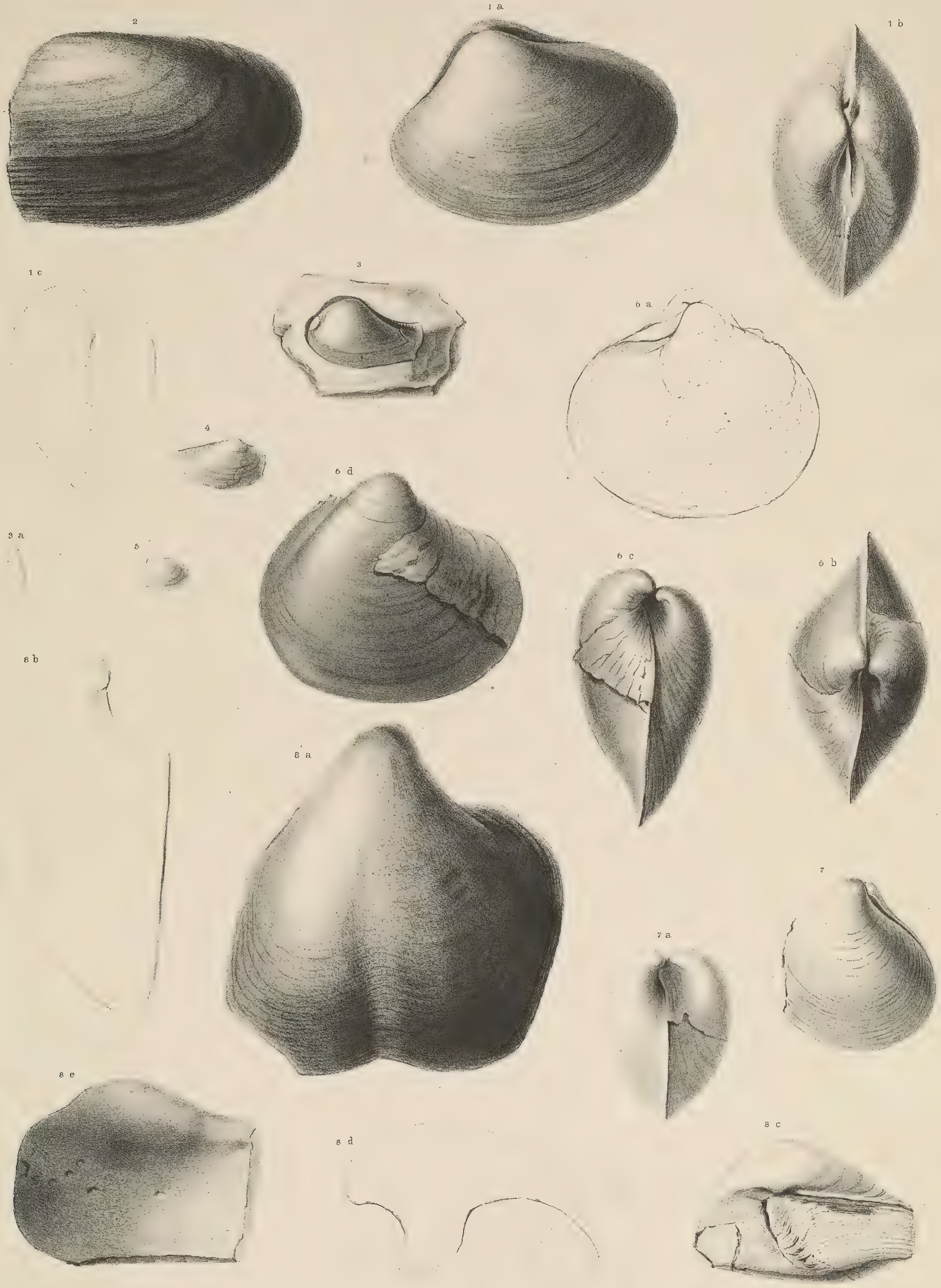
V.E/193



Drawn by J. D. Dana

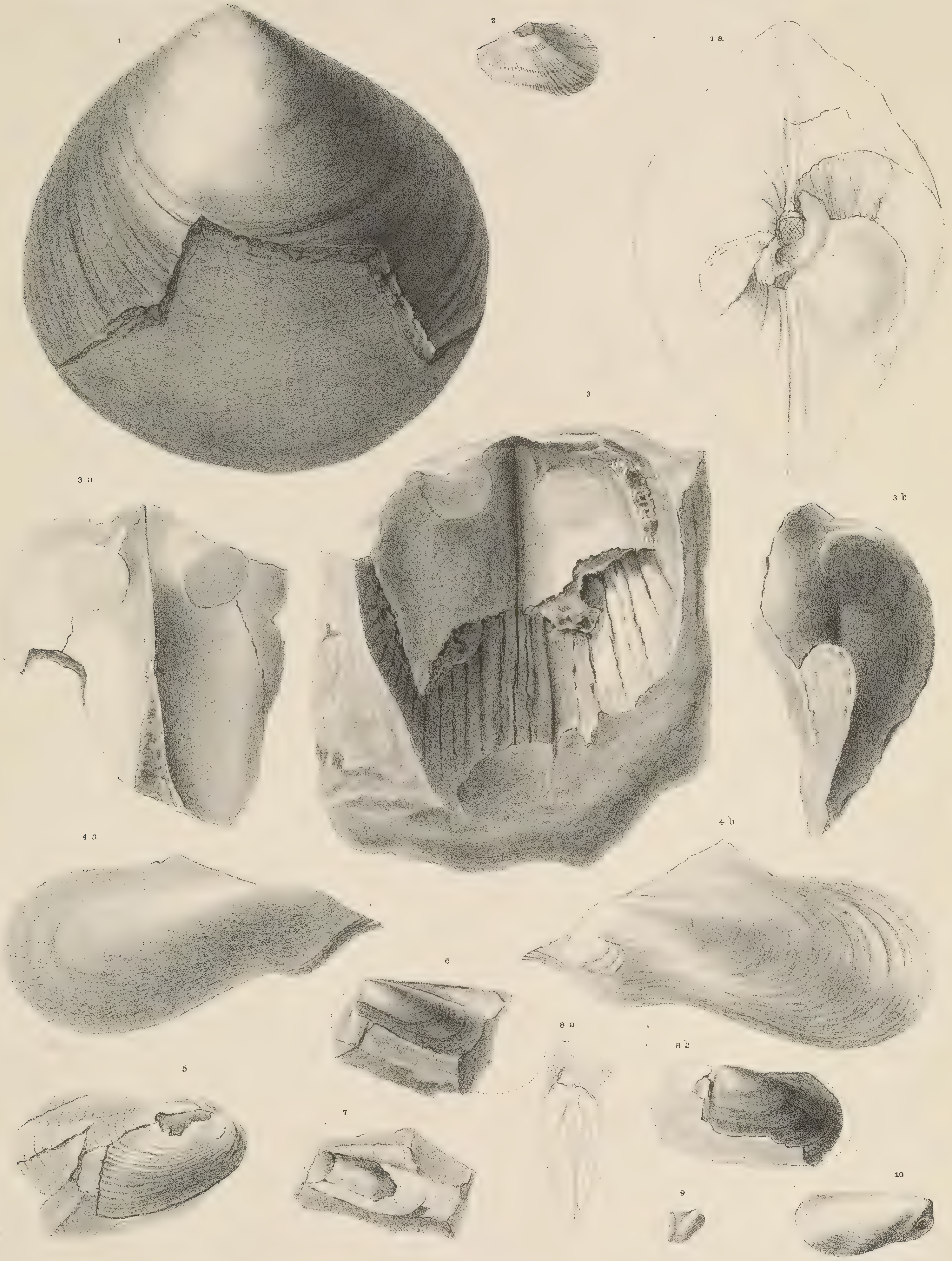
Lith. of Sarony & Major 117. Fulton St. N.Y.

Fig. 1a, b, Mæonia carinata. —— 2, 3, M. fragilis. —— 4a, b, c, M. myiformis. —— 5a, b, c, M. elliptica. —— 6, 6a, M. elliptica? —— 7, 7a, 8, 8a, M. grandis.



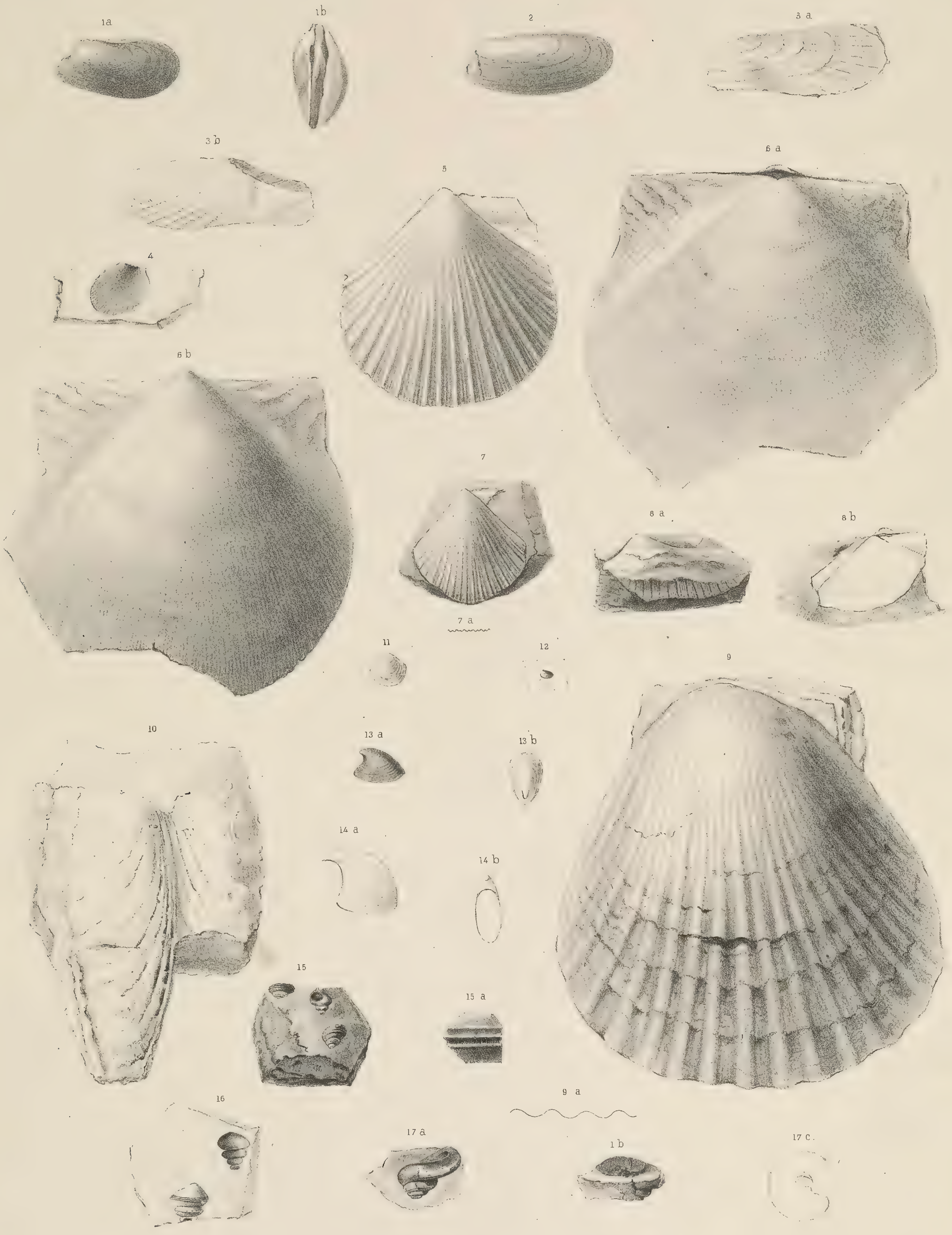
Drawn by J. D. Dana. *Lith. of Sarony & Major 117 Fulton St. N.Y.*

Fig. 1 a, b, c, Mæonia gracilis. — 2, M. recta. — 3, 3 a, Nucula abrupta. — 4, N. concinna. — 5, N. glendonensis. — 6 a, b, c, d, Eurydesma elliptica. — 7, 7 a, E. globosa. — 8 a, b, c, d, e, E. sacculus.



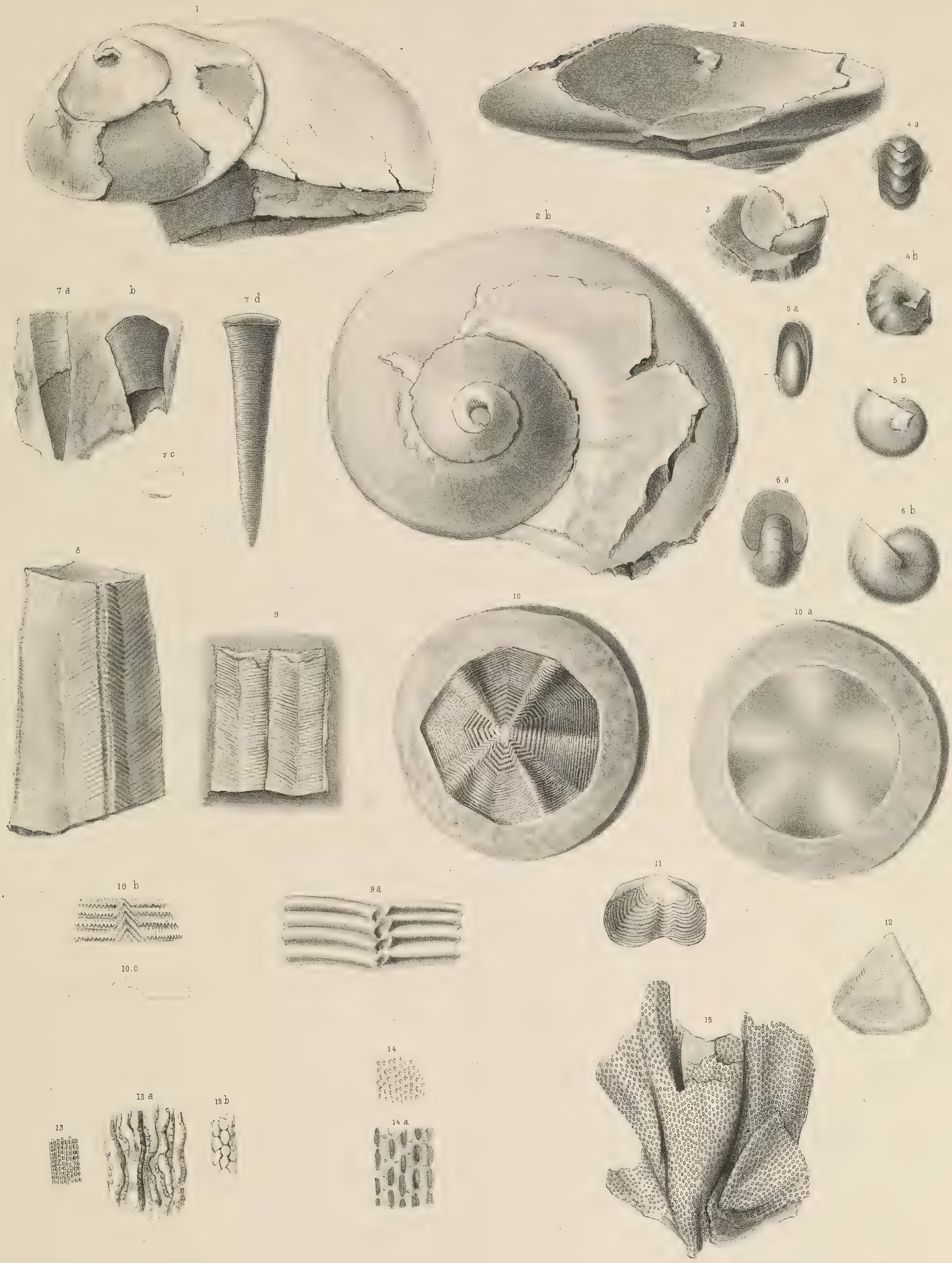
Drawn by J D Dana. *Lith. of Sarony & Major 117. Fulton St. N.Y.*

Fig. 1, 1 a, Eurydesma cordata. — 2, Cardium australe. — 3, 3 a, b, C. ferox. — 4 a, b, Cypricardia acutifrons. — 5, C. imbricata. — 6, 7, C. imbricata? — 8 a, b, C. arcodes. — 9, C.—? — 10, C. prærupta.



Drawn by J. D. Dana. *Lith of Sarony & Major, 117 Fulton St. N.Y.*

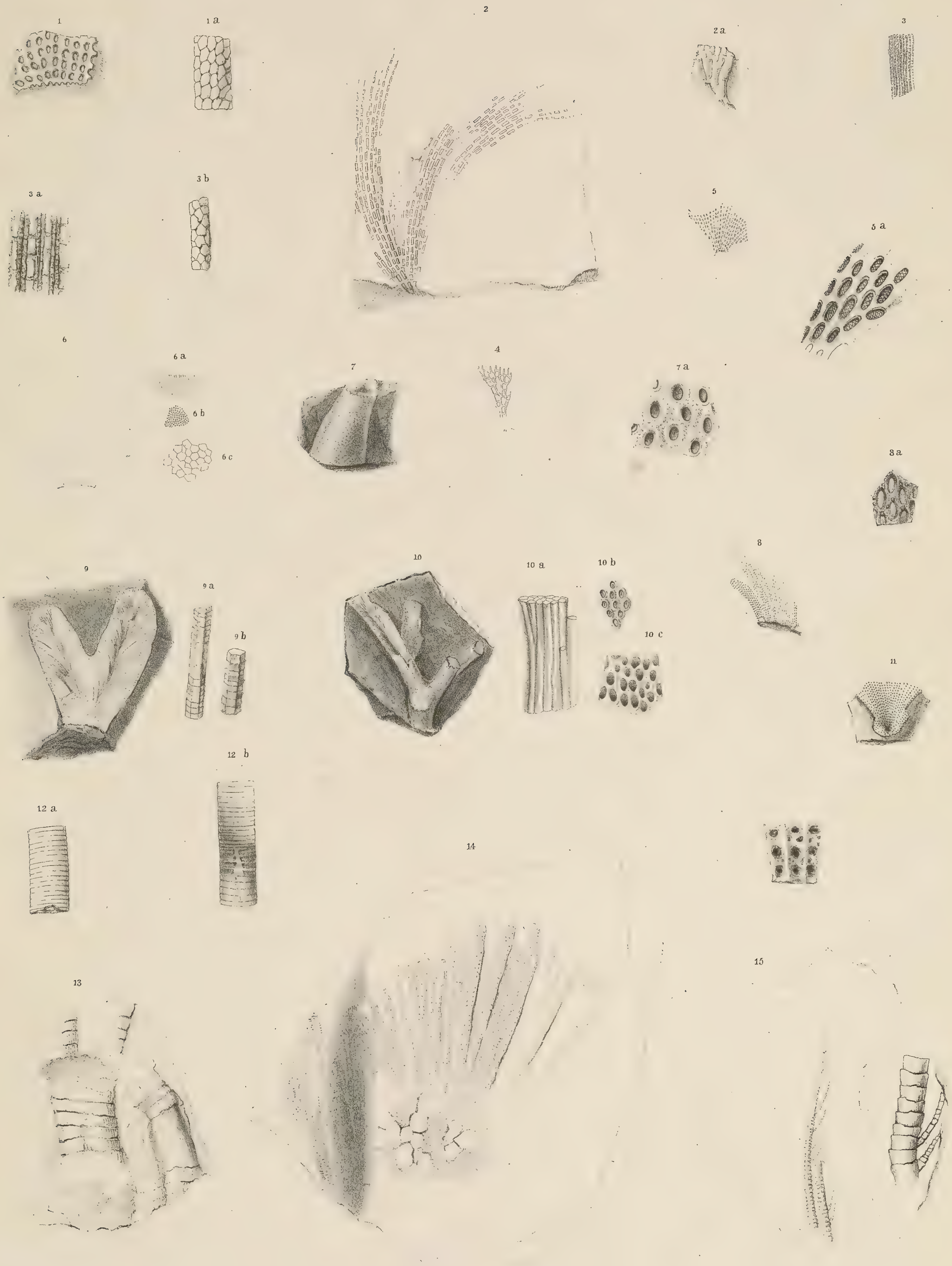
Fig. 1a, b, Cypricardia sitiqua. — 2 C. simplex. — 3 a, b, Cypricardia (Avicula?) veneris. — 4 Avicula volgensis ? — 5, Pecten comptus. — 6 a, b, P. leniusculus. 7, 7 a, P. tenuicollis. — 8, a, b, P. mitis. — 9, 9 a, P. illawarrensis — 10 Avicula ? — 11, 12. — ? — 13 a, b, Pileopsis tenella. — 14 a, b, P. alta. — 15, 15, a, 16, Pleurotomaria Morrisiana. — 17 a, b, c, P. nuda.



Drawn by J. D. Dana

Lith. of Sarony & Major 117 Fulton St N.Y.

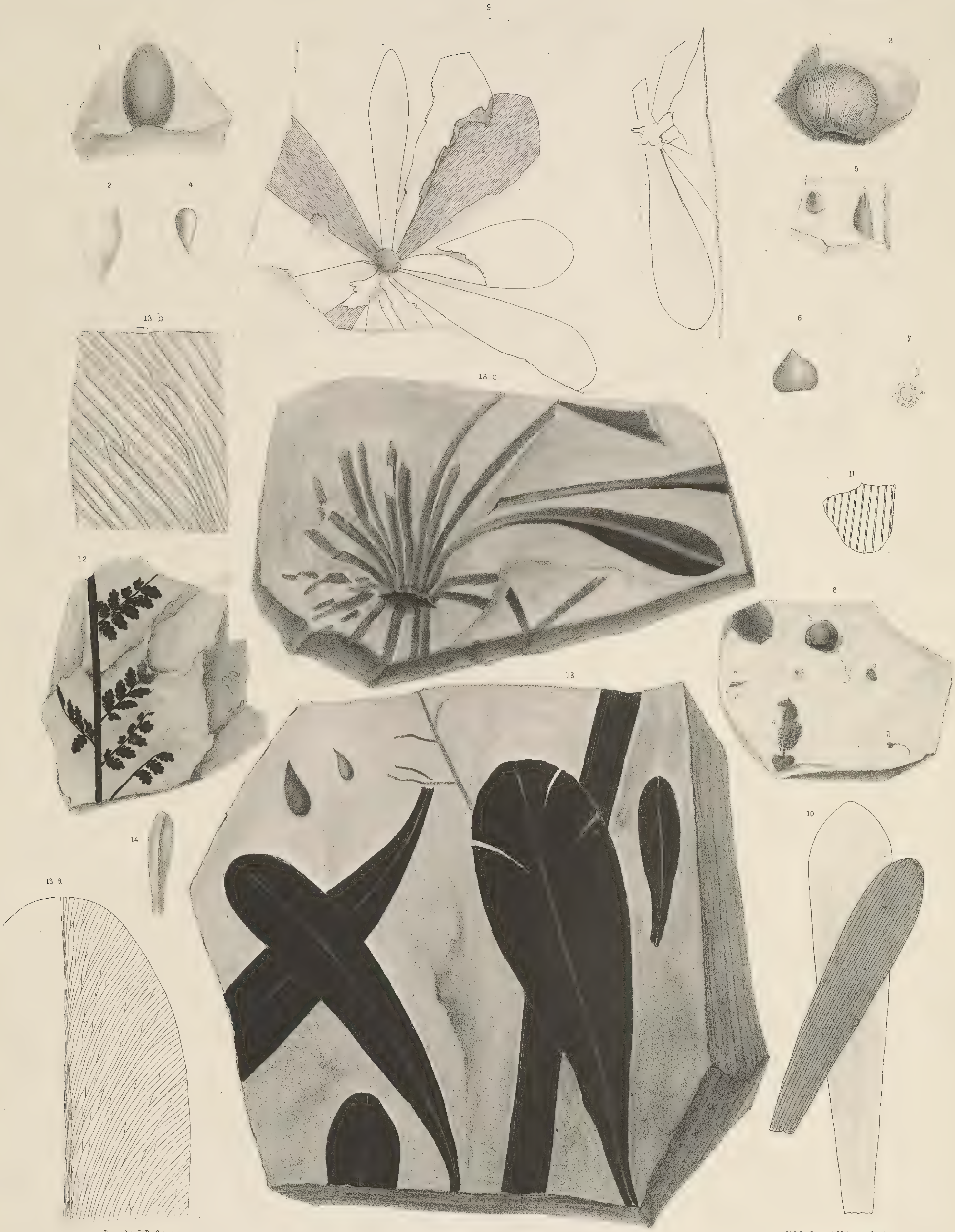
Fig. 1, Platyschisma oculus. — 2 a, b, P. depressum. — 3, Natica. — 4 a, b, Bellerophon undulatus. — 5 a, b, B. strictus. — 6 a, b, B. micromphalus. — 7 a, b, c, d, Theca lanceolata. — 8, Conularia inornata. — 9, 9 a, C levigata. — 10, 10 a, b, c, 11, 12, Pentadia (Tribrachyocrinus ?) corona. — 13, 13 a, b, Fenestella internata. — 14, 14, a, F. media. — 15, F. internata ?



Drawn by J. D. Dana.

Lith. of Sarony & Major Fulton St N.Y.

Fig. 1, 1a, Fenestella ampla. — 2, 2 a, F. ampla? — 3, 3 a, b, F. fossula. — 4, F. gracilis. — 5, 5 a, F. —? — 6, 6 a, b, c, Chetetes crinita. — 7, 7 a, 8, 8 a, C. tasmaniensis. — 9, 9 a, b, C. ovata. — 10, 10 a, b, c, C. gracilis. — 11. —?, 12—15 Encrinital Remains.

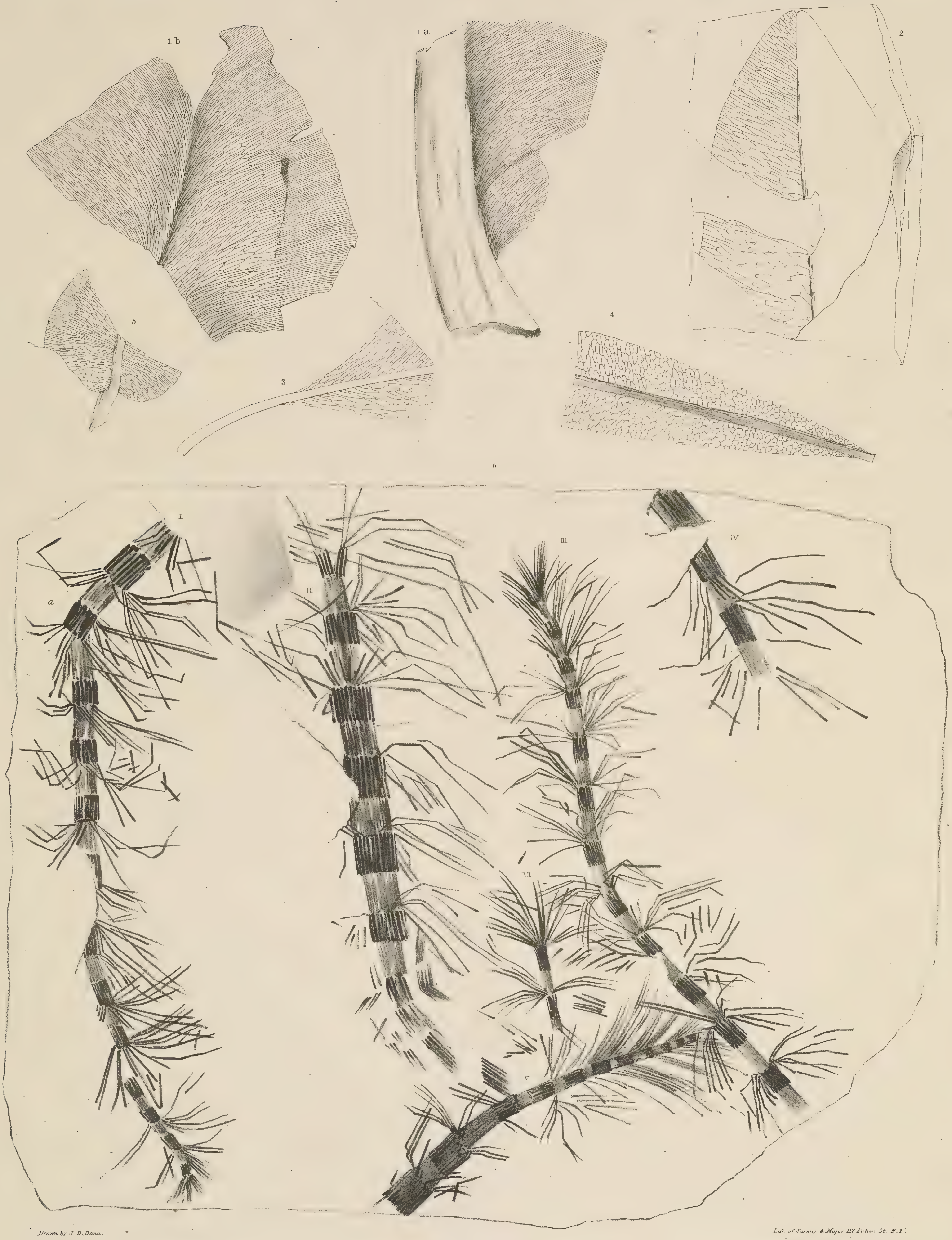


Drawn by J. D. Dana.

Lith by Sarony & Major, 117 Fulton St. N.Y.

Fig. 1 _ 8, Fruit scales. _ 9, Noeggerathia spatulata. _ 10. N. media. _ 11. Calamites ? _ 12, Sphenopteris lobifolia. _ 13, 13 a, b, c, 14 Glossopteris Browniana.

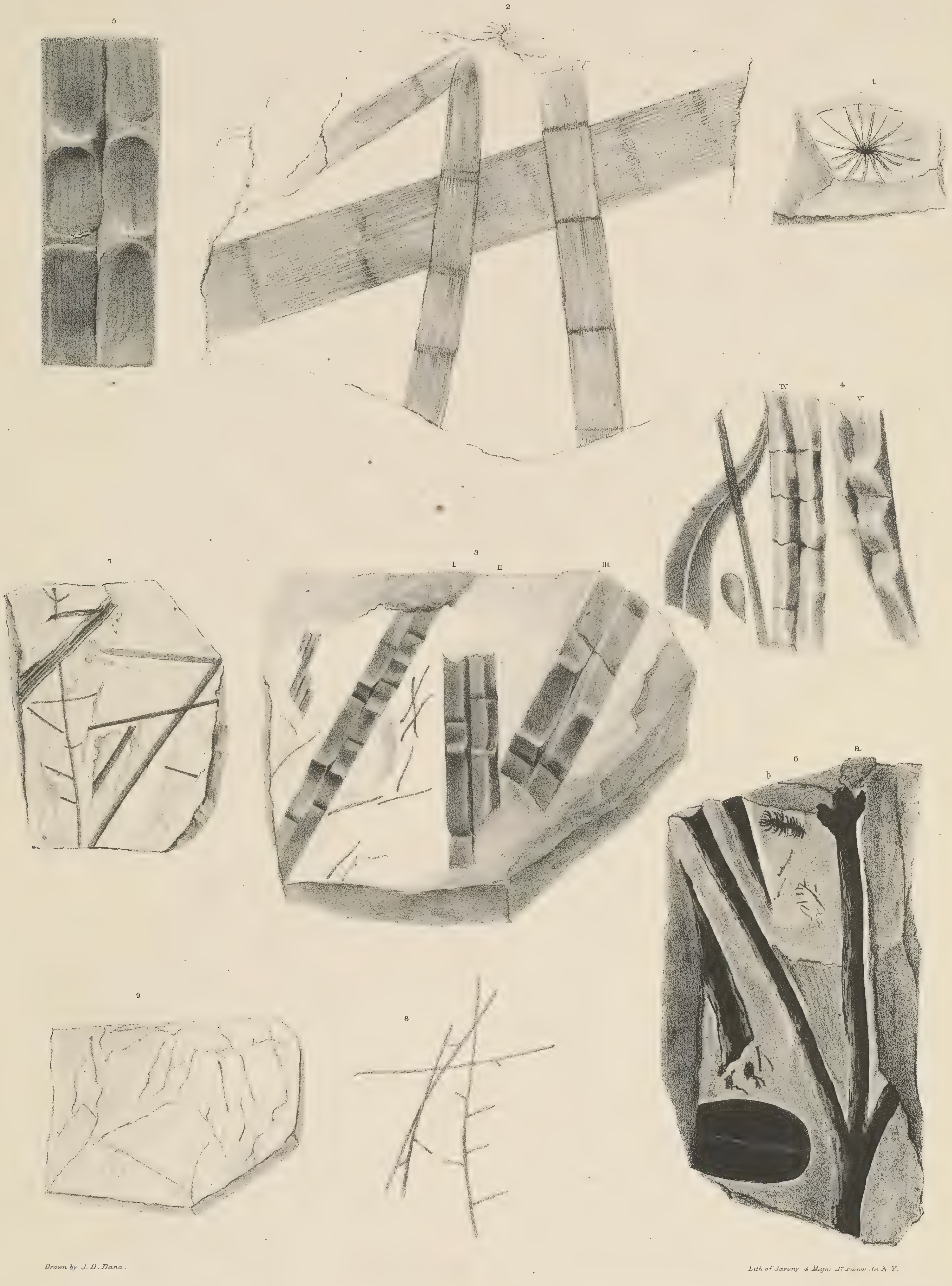
V. E/198



Drawn by J. D. Dana.

Lith. of Sarony & Major 117 Fulton St. N.Y.

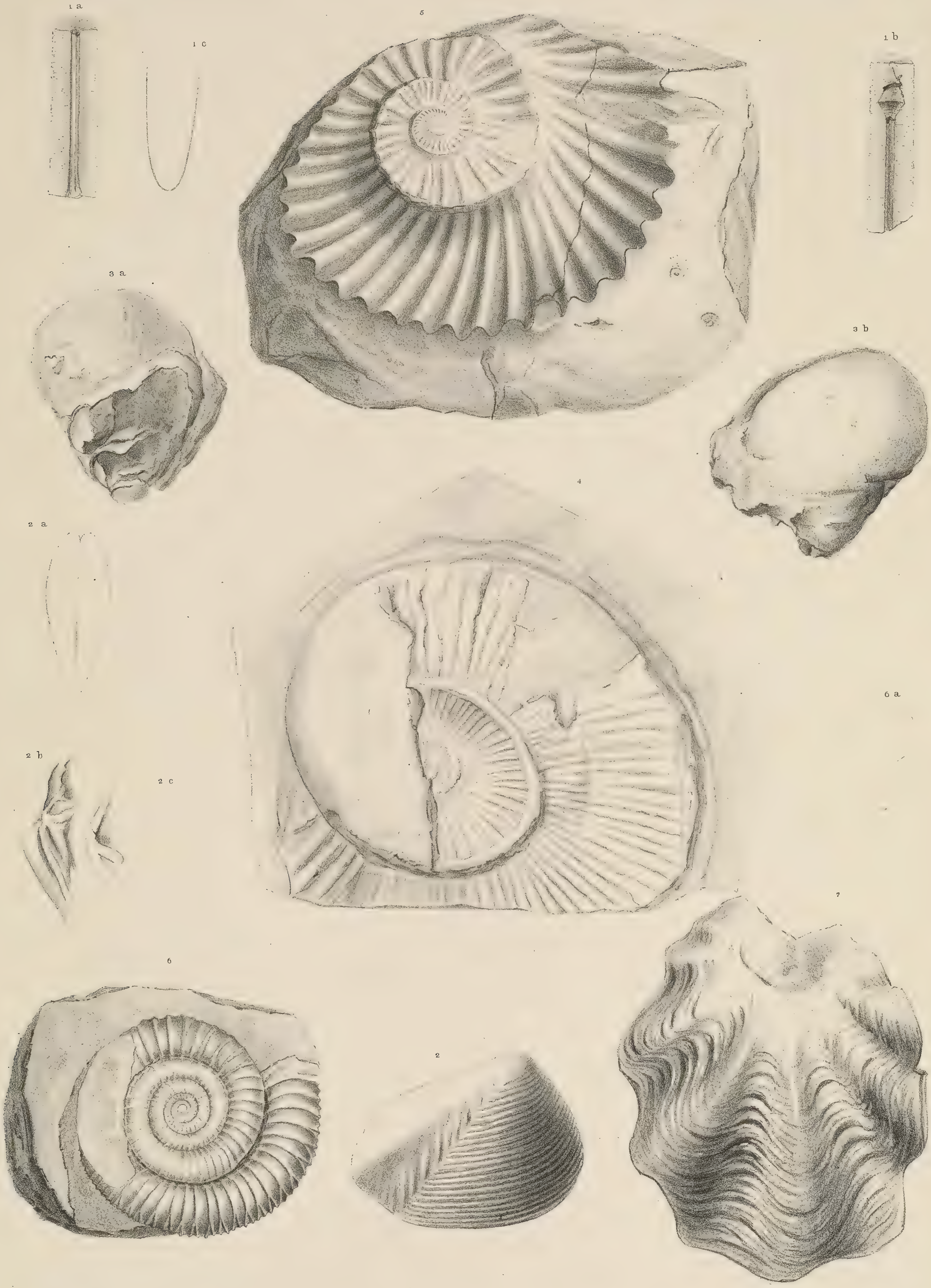
Fig. 1a. b, Glossopteris ampla. —— 2 G. reticulum. —— 3. G. —?— 4, G. elongata. —— 5, G? cordata. —— 6 Phyllotheca australis.



Drawn by J. D. Dana.

Lith of Sarony & Major 117 Fulton St. N. Y.

Fig. 1. Phyllotheca australis. — 2, P — ? — 3, 4, 5, Clasteria australis. — 6 a, Anarthrocanna ? — 6 b, Cytoseirites ? — 7, 8, Austrella rigida. — 9, Confervites ? tenella.



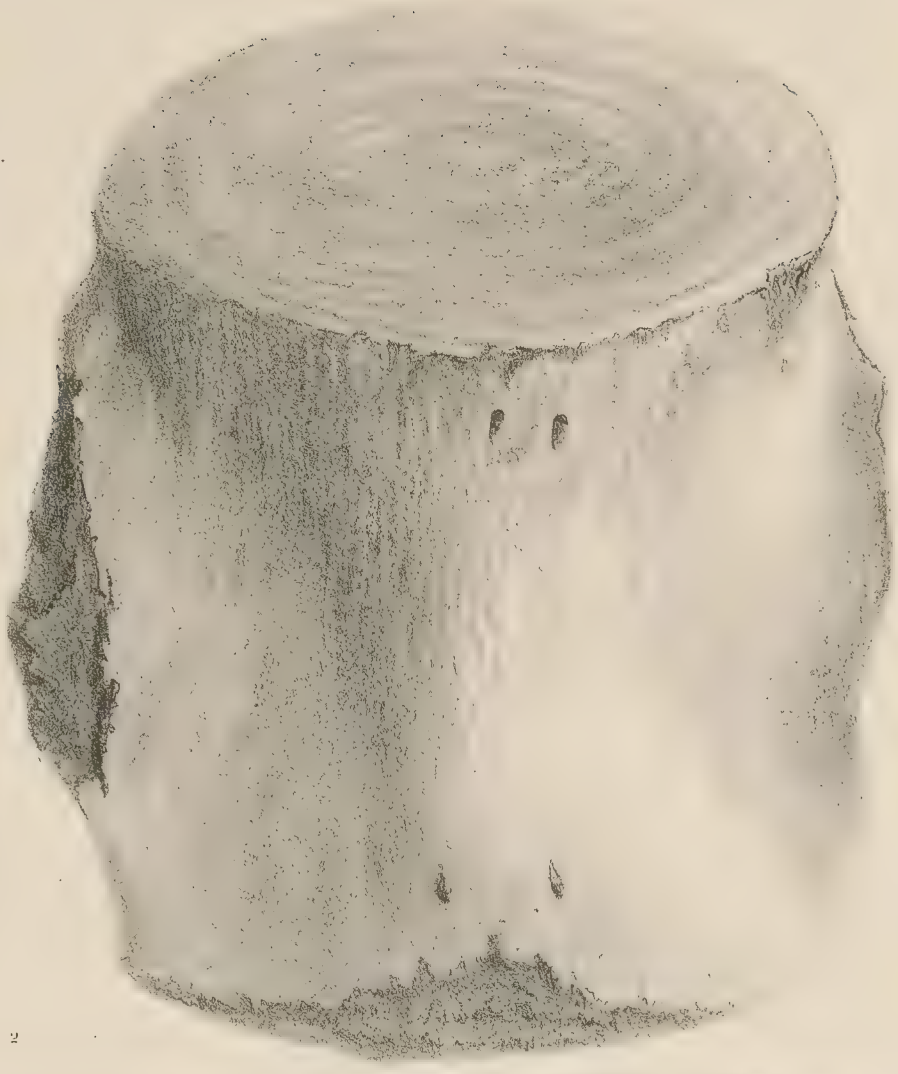
Drawn by J.D. Dana.

Lith. of Sarony & Major 117. Fulton St. N.Y.

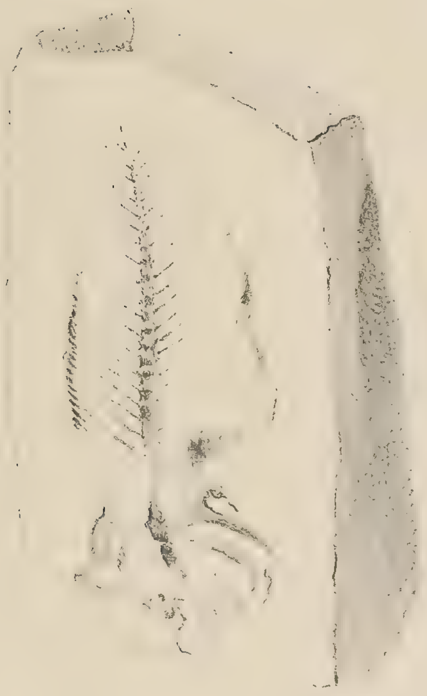
Fig. 1 a, b, c, Helicerus fuegiensis. — 2, 2 a, b, c, Trigonia Lorentii. — 3 a, b, Turbo. — ? 4, Nautilus tenui-planatus. — 5, Ammonites Pickeringii. — 6, 6 a, Ammonites. — ? 7, Ostræa. — ?

III.F/906

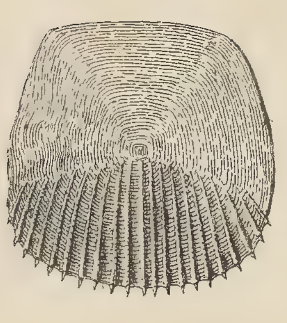
1



3

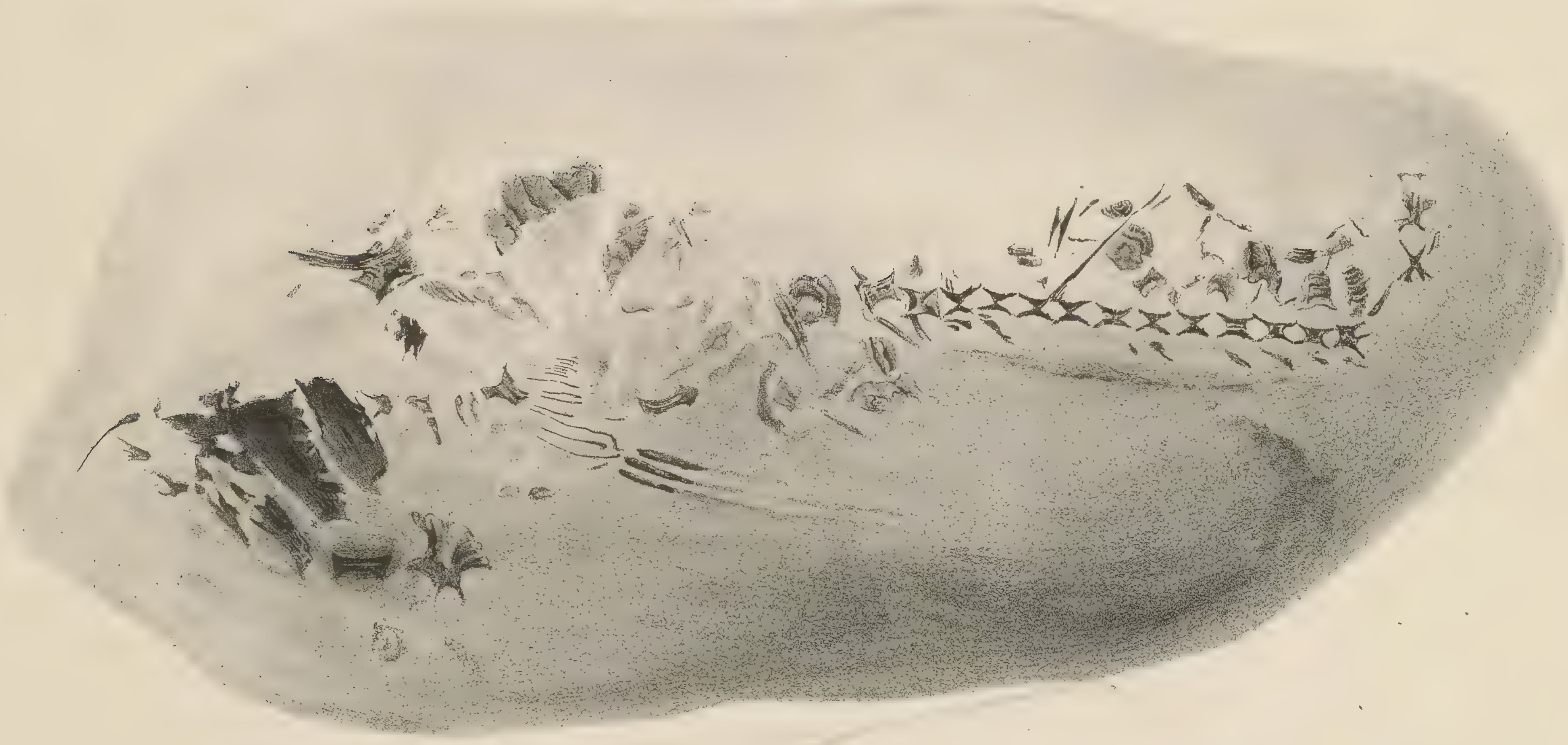


2 a

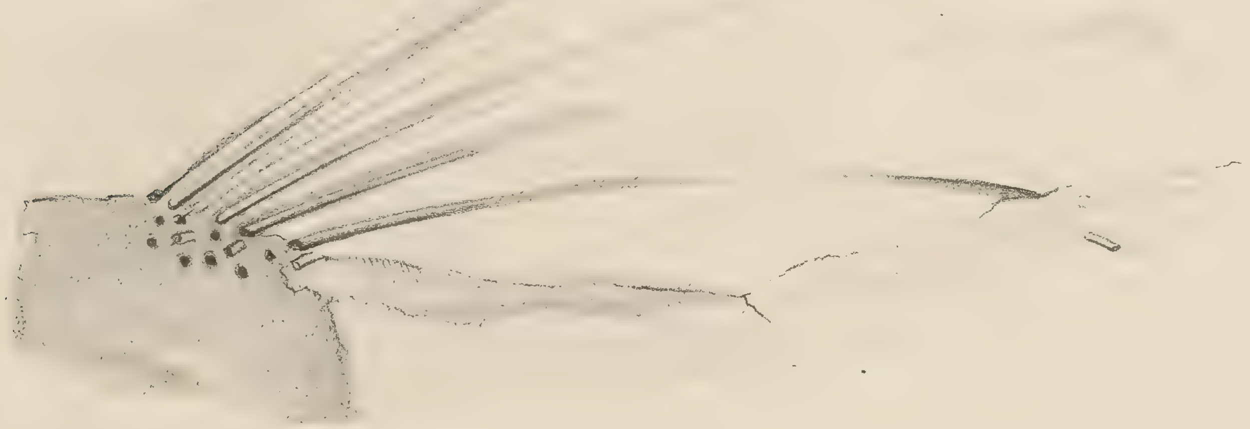


2 b

2

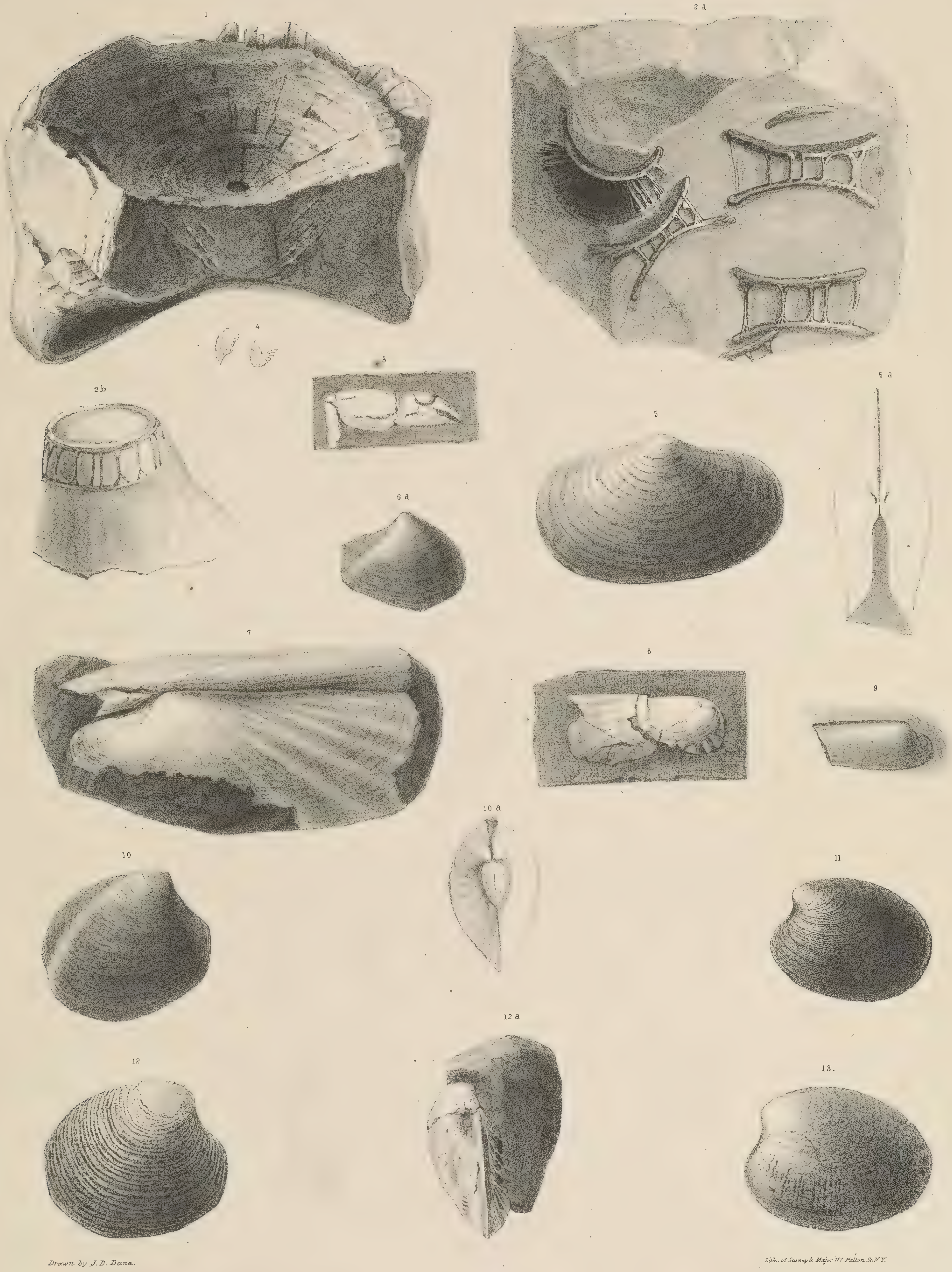


4



Drawn by J. D. Dana.

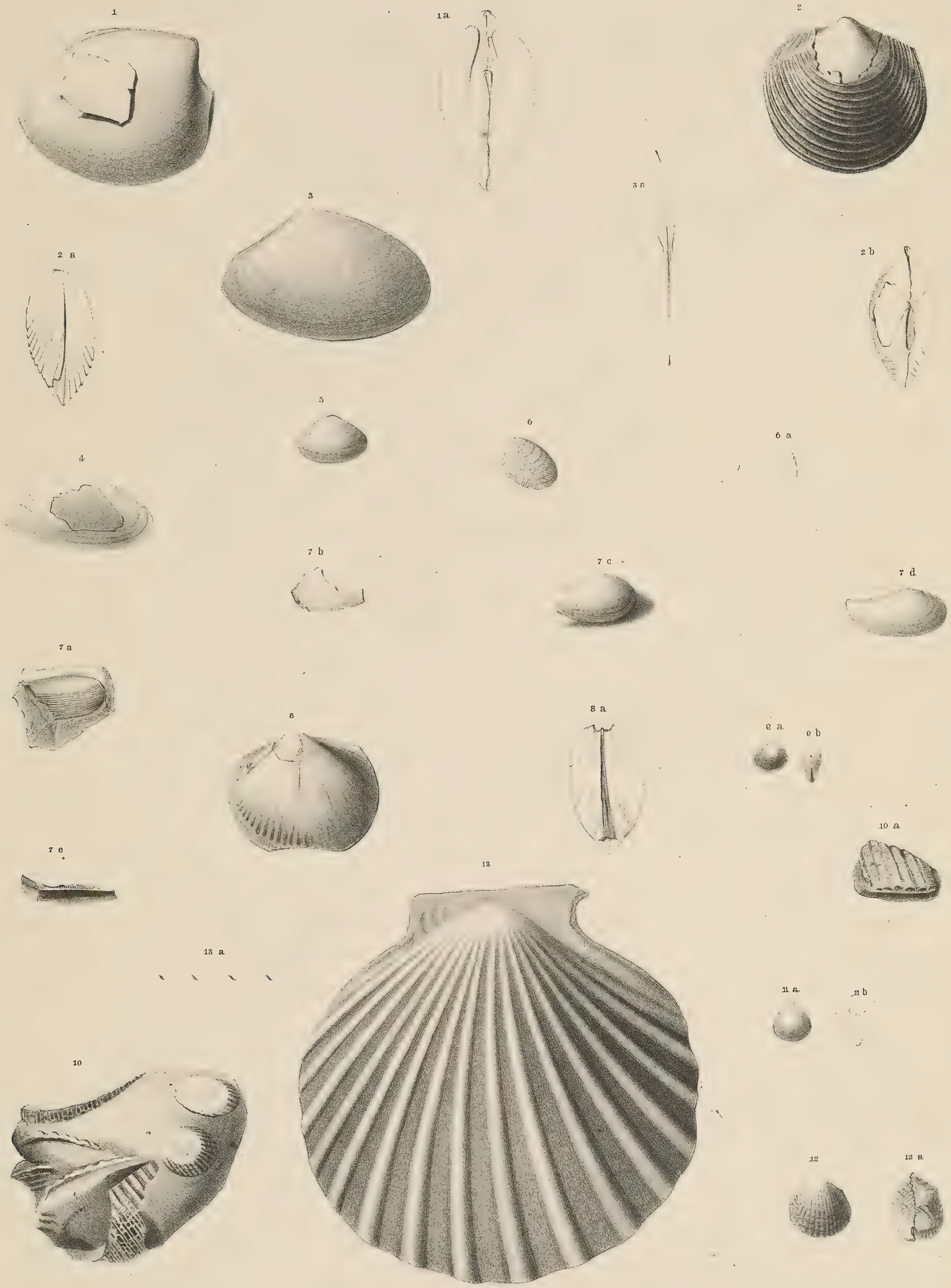
Lith. of Sarony & Major, 117 Fulton St. N.Y.



Drawn by J. D. Dana.

Lith. of Sarony & Major 117 Fulton St. N.Y.

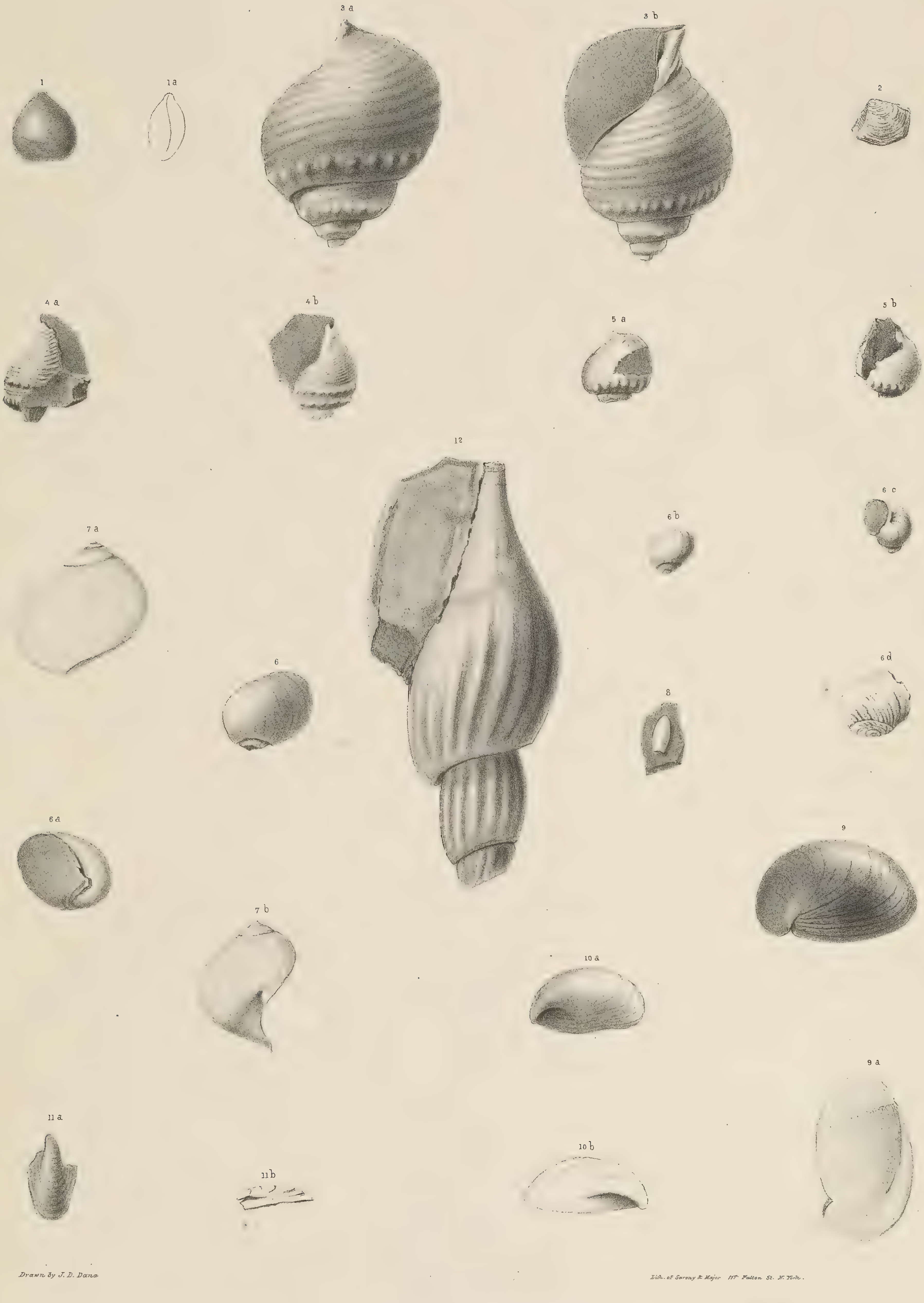
Fig. 1, 2, a, b, Fish Vertebræ. — 3, Callianassa oregonensis. — 4, Balanus. — 5, 5 a, Mya abrupta. — 6 a, Thracia trapezoides. — 7, 8, Solemya ventricosa. — 9, Donax ? protexta. — 10, 10 a, Venus bisecta. — 11. V. angustifrons. — 12, 12 a, V. lamellifera. — 13, V. brevilineata.



Drawn by J.D. Dana.

Lith of Sarony & Major 117 Fulton St N.Y.

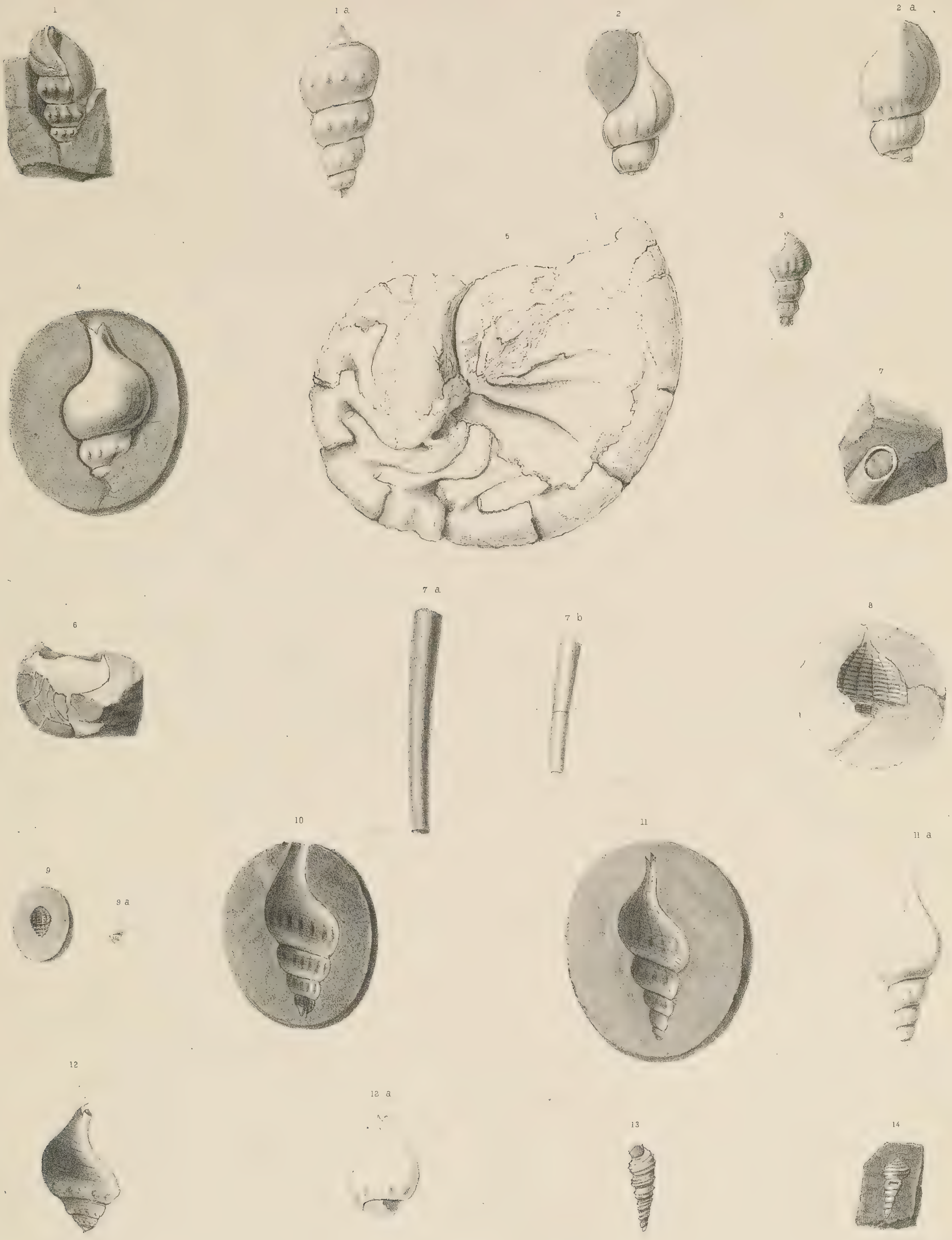
Fig. 1, 1 a, Venus ___ ? ___ 2, 2 a, b, Lucina acutilineata. ___ 3, 3 a, Tellina arctata. ___ 4, T. emacerata. ___ 5, T. albaria. ___ 6, 6 a, Nucula divaricata. ___ 7 a, b, c, d, e, N. impressa. ___ 8, 8 a, Pectunculus patulus. ___ 9 a, b, P. nitens. ___ 10, 10 a, Arca devincta. ___ 11 a, b s. ___ ? 12, 12 a, Cardita subtenta. ___ 13, 13 a, Pecten propatulus.



Drawn by J. D. Dana

Lith. of Sarony & Major 117 Fulton St. N. York.

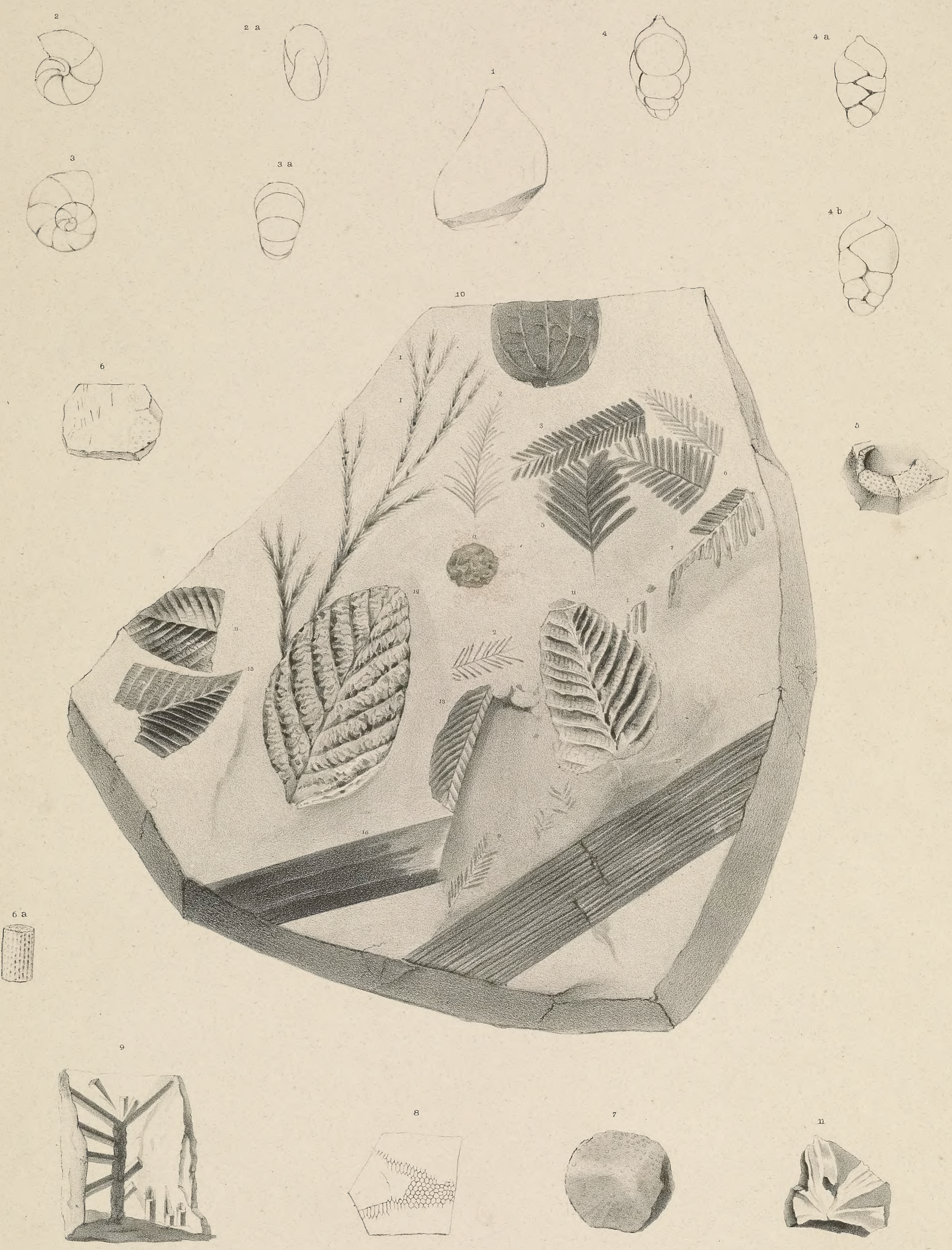
Fig 1, 1a, Terebratula nitens. — 2 — ? 3 a, b, 4 a, b, 5 a, b, Dolium petrosum. — 6, 6a b, c, d, Sigaretus scopulosus. — 7 a, b, Natica saxea. — 8 Bulla petrosa. — 9, 9, a, 10 a, b, Crepidula praerupta. — 11 a, b, C. — ? — 12. Rostellaria indurata.



Drawn by J. D. Dana

Lith. of Sarony & Major 117 Fulton St N.Y.

Fig. 1, 1 a, Cerithium mediale. — 2, 2 a Buccinum devinctum. — 3, Fusus geniculus. — 4, F. corpulentus. — 5, 6, Nautilus angustatus. — 7, 7, a, b, Teredo substriata. — 8, — 14, Undetermined species.



Drawn by J.D. Dana.

Lith. of Sarony & Major 117. Fulton St. N.Y.

Fig. 1. — cast, imperfect. — 2, 2a, 3, 3a, 4, 4a, b, Foraminifera. — 5, 6, 6a, Galerites oregonensis. — 7, 8. — ? 9, Abies robusta. 10, Juniperus, Taxodium, Smilax, etc. — 11, Coralline Alga.

35
3564 ①

SMITHSONIAN INSTITUTION LIBRARIES
3 9088 01721 7134